

The
**DENTAL
DIGEST**

PROPERTY OF
DENTAL LIBRARY
UNIVERSITY OF MICHIGAN
DON'T MUTILATE OR
REMOVE

May
1932

These suggestions will increase the natural beauty of Hecolite dentures



● Not only does Hecolite provide you with the means of giving lasting satisfaction to your denture wearing patients, but the inherent quality and stability of the material also allows you to provide artificial dentures that are more natural in appearance and expression. As an aid in securing these desired effects, the following suggestions will prove helpful.

A very pleasing effect can be obtained by stippling Hecolite. This is a very simple procedure and is accomplished by the use of a large round bur, or plug finishing bur, that has been bent in the shank to make it slightly off center. Hold the denture lightly against the bur and work it over the entire gum section of the denture.

After stippling, varnish the entire denture, including the tissue side, with Hecolite Repair Solution, applied with a small cotton pellet. This gives a lustrous gloss over the entire denture and seals the surface which to a large

degree, will prevent tobacco stains from working into the material.

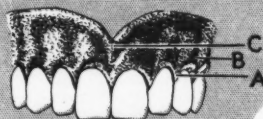
A more natural effect can be obtained with Hecolite, by allowing the material to fill the interdental spaces, as shown in "A" below. Make the juncture of Hecolite and the necks of the teeth come to an abrupt angle with the chisel as in "B." Then round with polishing buff and pumice and a pleasing, natural reflection is obtained when the saliva moistens the gums.

The extra time taken to finish Hecolite dentures in this manner will more than repay in the increased satisfaction of your patients. Questions regarding this or any other phase of Hecolite technique will be gladly answered by our Research and Technical department.

American Hecolite Denture Corporation,
94 East Sixth Street, Portland,
Oregon. New York Sales Office,
41 Union Square West.

A Allow Hecolite to fill the interdental spaces.

B Make junction of Hecolite and necks of teeth come to an



abrupt angle with the chisel.

C A labial frenum gives a more natural expression to the lips.

YOU DON'T EXPERIMENT

WHEN YOU USE HECOLITE

The DENTAL DIGEST

VOLUME 38

May, 1932

NUMBER 5

Surgical Treatment of Chronic Suppurative Pericementitis	-	162
		<i>P. A. Howell, D.D.S.</i>
The Editor's Page	- - - - -	167
A Common Interest Between the Orthodontist and General Practitioner	- - - - -	168
		<i>W. T. Cate, D.D.S.</i>
Infections of the Mouth	- - - - -	170
		<i>Casper M. Epstein, M.D., D.D.S.</i>
A Dental Kink	- - - - -	174
		<i>Walter G. Hine, D.D.S.</i>
Cavity Preparations for Abutments and Individual Restorations (Second Installment)	- - - - -	175
		<i>J. R. Schwartz, D.D.S.</i>
Dental Assistants and Secretaries	- - - - -	180
		<i>Elsie Grey</i>
Radiodontia During Childhood	- - - - -	181
		<i>F. Blaine Rhobotham, D.D.S., F.A.C.D.</i>
Immediate Denture Service	- - - - -	186
		<i>Franklin W. Otto, D.D.S.</i>
Letters	- - - - -	192
About Our Contributors	- - - - -	194
The Publisher's Note Book	- - - - -	198

EDWARD J. RYAN, B.S., D.D.S., Editor

T. N. CHRISTIAN, D.D.S., Managing Editor

ETHEL H. DAVIS, A.B., Assistant Editor

An Oral Hygiene Publication.
Published monthly on the fifteenth
by Dental Digest, Inc.

Entered as second class matter at
the Postoffice at Pittsburgh, Pa.,
under the Act of Congress, March
3, 1879.

PUBLICATION OFFICE:
1125 Wolfendale St.
Pittsburgh, Pa.

Merwin B. Massol, Publisher;
Lynn Allen Smith, Treasurer; As-
sociates: J. J. Downes, J. W. Kauf-
man, R. C. Ketterer.

Subscriptions should be sent to the
Publication Office, 1125 Wolfendale
St., Pittsburgh, Pa.

Manuscripts and correspondence
regarding editorial matters should
be addressed to the Editor at 1218
Pratt Blvd., Chicago, Ill.

Subscription rates, including post-
age:

\$2 per year in the United States,
Alaska, Cuba, Guam, Hawaiian
Islands, Mexico, Philippines, Porto
Rico. To Canada, Great Britain and
Continent, \$2.75; Australia, \$4.75.
All other countries, \$2.75.

DISTRICT OFFICES

Chicago: Peoples Gas Bldg.; W. B.
Conant, Western Manager.

New York: 18 East 48th St.;
Stuart M. Stanley, Eastern Manager.

St. Louis: Syndicate Trust Bldg.;
A. D. McKinney, Southern Manager.

San Francisco: 155 Montgomery
St.; Roger A. Johnstone, Pacific
Coast Manager.

Los Angeles: 315 West 9th St.

Copyright, 1932
by Dental Digest, Inc.

SURGICAL TREATMENT OF CHRONIC SUPPURATIVE PERICEMENTITIS

P. A. HOWELL, D.D.S.

Beloit, Wisconsin

THE term chronic suppurative pericementitis is applied to that disease of the investing tissues of the teeth in which a pus pocket is formed along the side of the root.

The pathologic changes of the investing tissues of the teeth as shown by Doctor F. B. Noyes¹ are of two distinct conditions:

One caused by deposits of salivary calculus, in which the infection is described as traveling along the lymphatics that are attached to the vessels of the gum tissues, *on the outer side of the bone of the alveolar process*; the other, resulting from an initial gingivitis (caused in the main by injury, or deposits of serum calculus), which travels along the lymphatics attached to the vessels that course through the peridental membrane, *on the inner side of the alveolar process*.

Deposits of salivary calculus are not to be considered a cause of the formation of pus pockets.

After there is an actual break in tissues, which apparently occurs about midway between the surface of the root and the bone, the tissue attached to the cementum is exposed to the fluids of the mouth, and it soon dies, leaving the cementum denuded. At the same time, the vitality of the cementum is lost as a result of the destruction of the cementoblasts, which lie upon its surface. It is comparable to a piece of necrosed bone, which cannot be exfoliated, and remains as a constant irritant to the adjacent soft tissue. Upon these pathologic changes, the treatment presented here is based. It should be recognized that practically all hope of reconstruction of the peridental tissues to normal, or of their reattachment to the cementum, is gone forever.

The pathologic picture of these overlying tissues is one of recurrent infection, which agrees with clinical observation of cases in practice.

A pocket once formed is, therefore, a menace to health in that it offers opportunity for the accumulation of organisms in contact with connective tissues through which there is easy

access to the circulation. To treat these pockets in what now seems to be the most rational way requires that one recognize clearly the meaning of the pathologic changes which have been presented.

If this is done, then we will give up the idea so long held that our effort in treatment is to bring about a reattachment of the overlying tissues to the root.

METHODS OF OPERATIVE PROCEDURE

Three principal methods of operative procedure may be recommended:

1. The extraction of those teeth about which we may not hope to prevent reinfection by other methods of treatment. All posterior teeth that are out of occlusion should be removed unless occlusion is to be restored. Multirrooted teeth in which the pathologic condition has entered the bifurcation are usually hopeless. There is no definite rule, but unless at least the apical third of the root is surrounded by good bone, it would be wise to extract the tooth.

2. For those teeth which have pockets, but which are not to be extracted, the problem is to prevent reinfection. The first procedure is to eliminate irritation, both by removal of deposits and also by the correction of fillings, crowns, and bridges, which, directly, as by bad margins, or indirectly, as by bad contacts, cause inflammation. When all sources of inflammation are removed, the soft tissue will usually rid itself of infection if the pocket is thoroughly cleansed by irrigation with physiologic solution of sodium chloride. Then the problem arises of preventing reinfection of the pocket. To do this, cleanliness of the pocket must be maintained. In a majority of cases this is impossible. However, in cases in which the cooperation of the patient is secured, reinfection of some pockets may be effectively prevented, and they may go indefinitely without further progress or systemic danger.

3. In most cases in which there are pockets, by far the simplest and most effective method of treatment is to cut away the overlying tissue and thus

eliminate the pocket. When this is done, no further treatment except reasonable prophylaxis is required by the dentist, and no special care except thorough home prophylaxis is necessary on the part of the patient. To carry out this procedure, a rather definite technique is necessary, based upon the conditions presented.

Cases may be divided into three groups:

1. Those in which there are pockets on the labial, buccal, or lingual sides of the roots.

2. Those in which there are proximal pockets.

3. Those in which there are pockets that encircle teeth.

In the majority of cases a complex situation is found, representing all three groups in various stages of development.

OPERATIVE PROCEDURE

The operation is performed under novocain anesthesia. The effort is made in each case to remove all overlying tissue, thus laying the root bare to the depth of the pocket. To do this, it is usually necessary to trim off a little of the crest of the process because the detachment of the peridental membrane from the cementum is in advance of the destruction of the bone. This can be observed in roentgenograms as well as in the microscopic specimens.

In cases in which there are pockets on the labial, buccal, or lingual surfaces, an incision is first made through the gum on a line about even with the edge of the bone; that is, the line to which the bone has been destroyed, removing all soft tissue crownwise of this line. No interproximal tissue is removed if there are no proximal pockets. Next, the edge of the process is trimmed off with an excavating chisel or hoe-shaped scaler. In these cases the area is either irrigated with warm physiologic solution of sodium chloride until hemorrhage has ceased, or Wondrpak² is applied while bone is

²The Council on Dental Therapeutics gives the following composition of Wondrpak, according to the Westward Dental Products Company: Powder: Zinc oxide, 70%; powdered rosin, 30%; asbestos, .625%. Liquid: Oil of cloves, 80%; olive oil, 20%; aniline red oil (soluble), 100 of 1% Trace.

¹Noyes, F. B.: *J. N. D. A.*, February, 1920, p. 123.

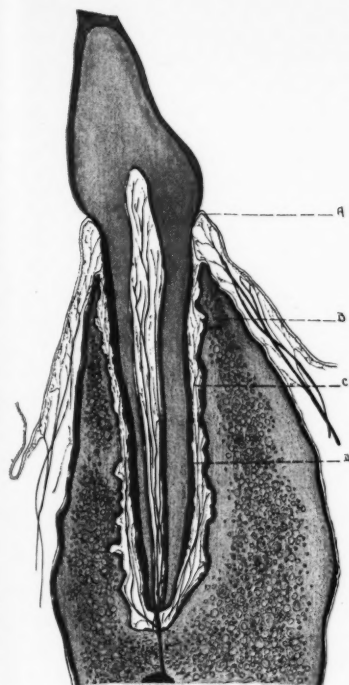


Fig. 1

Fig. 1—Cross section of lower jaw through central incisor (Noyes).

When infection follows deposits of salivary calculus at A, the infection follows the lymphatics which course through the gum tissue on the outer side of the bone of the alveolar process. The result is a gingivitis which automatically clears up upon removal of the salivary calculus, followed by brushing.

When infection follows deposits of serual calculus, or as the result of trauma, the infection follows the lymphatics which course through the periodental membrane C, on the inner side of the alveolar process, and destroys the cementum D, causing the formation of a pus pocket.

It is the pus pockets along the side of the root on the inner side of the alveolus that are eradicated by surgical removal of all overlying tissue to the extreme depth of the pocket.

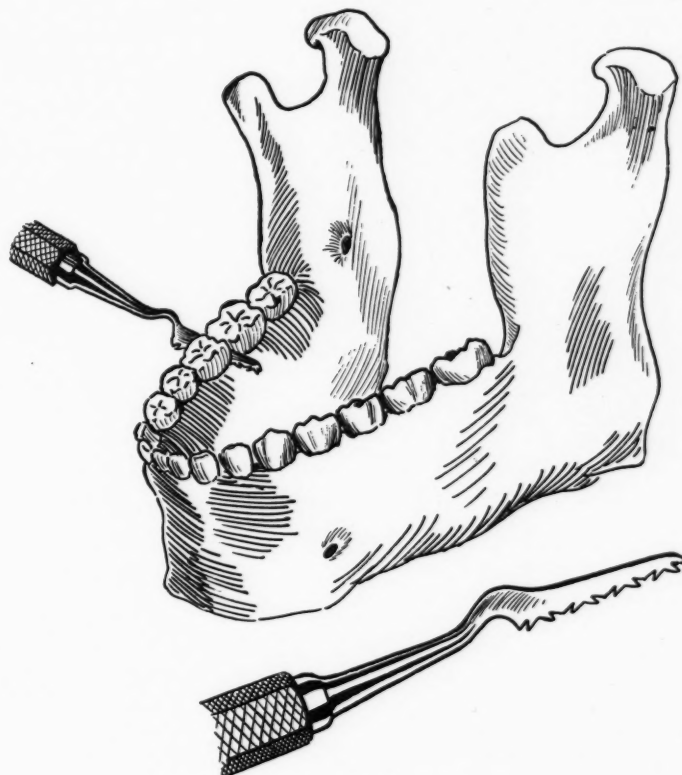


Fig. 2

Fig. 2—Saw curet (instrument 2) as it is placed between the lower first and second molars, where it is pushed and pulled downward toward the alveolus until it encounters hard bone, both lingually and labially. Instruments 1, 2, and 3 are so used between all teeth on which an operation is to be performed.

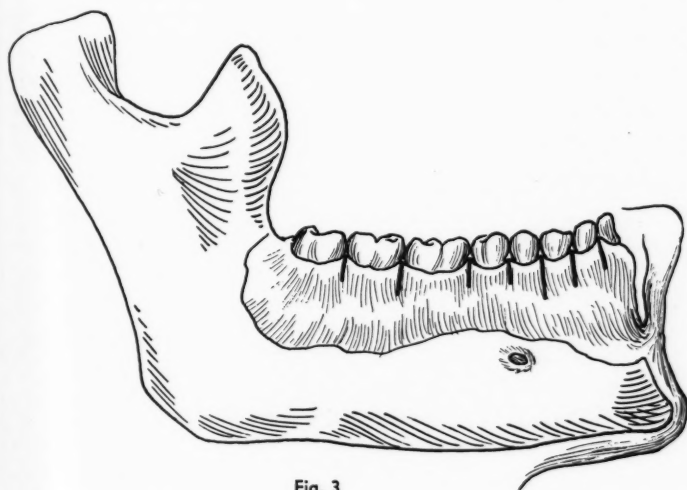


Fig. 3

Fig. 3—Appearance of perpendicular cuts resulting from the use of instruments 1, 2, and 3.

covered with blood. In case Wondrpak is not used, the patient is instructed to rinse the mouth often enough to keep all blood clots out of the operative area. In operations of this type, all incisions should be gradually curved; sharp angles should be avoided.

In cases in which there are proximal pockets, the operation is more difficult, as it is necessary to cut away the buccal and lingual bone and gum on teeth adjacent to the interproximal spaces, even with, or a little farther apically than the depth of the interproximal pocket. This must be done in order to eliminate the pocket, so that, after healing, the patient may take a mouthful of water and, by forcing it back and forth between the teeth, wash the interproximal regions thoroughly. Most cases like this are due to lack of contact or improper contact of the teeth, and it is, of course, important that a proper contact be restored.

In cases in which the pockets encircle the teeth, the operation is very simple, consisting of the removal of the unattached soft tissue and a little of the edge of the alveolar process, together with all dead soft tissue, dead peridental membrane, dead cementum, and all deposits on the teeth.

The Black method of surgical treatment in these cases is not a new one. I myself exhibited three patients, and performed an operation on one, according to the Black technique, before the Wisconsin State Dental Society at its annual meeting in Milwaukee in 1924. Doctor Black³ has fully described this technique.⁴

Our objections to the Black technique of 1919 are as follows:

1. The depth of the interproximal cut was difficult to determine.
2. The diseased proximal tissue was too difficult to remove.
3. Postoperative hemorrhage was often bothersome.
4. Postoperative pain was too great.
5. The teeth remained sensitive too long.

The technique presented here has reduced all these objections to a minimum. It is a composite technique, being taken from Black, Ward, Roush, and my own experience.

MATERIALS

After having experimented considerably, I selected a set of twelve instruments, nine of which are of the

Ward type, but all of which have been changed in some manner. These instruments include:

1. No. 1. Straight push and pull saw curet.
2. Nos. 2-3. Right and left push and pull saw curet.
3. Nos. 4-5-6. Knives or lances.
4. Nos. 7-8-9. Hoe-like chisels-scalers.
5. No. 10. Sickie scaler.
6. Nos. 11-12. Logan files.

The selection of instruments is a personal matter, but I consider the instruments mentioned as indispensable. At present I am using the Roush set in addition to those mentioned, and find those instruments very helpful. In addition to these instruments, the hypodermic syringe, cotton pliers, small gauze sponges, exodontia sponges, novocain, 10 per cent aqueous solution of mercurochrome, Wondrpak, waxed paper slab, and a spatula are needed.

OPERATIVE AREA

Roentgen and clinical examination will show what areas can be best treated by surgery. Actual personal experience will be the best guide as to which areas to operate. Errors will not be those of commission, but rather those of omission. According to the diagnosis, operation may be performed in an area of from one pocket to the entire thirty-two teeth at one sitting. In my own practice I have never operated on an entire mouth in one sitting.

The lower six anterior teeth present one of the most simple cases, taking from the mesial of one cuspid to the mesial of the opposite cuspid. The upper six anterior teeth present the most difficult cases. It is advisable to try a lower anterior case first. Often only a portion of the mouth is operated on at all. When the operation is to cover the whole mouth, it is advisable to do so in two or four sittings; but one should never stop an operation at the median line. The six anteriors with one of the two sides should be included. If anterior teeth are operated on separately, six sittings are required, and this should be the maximum number of sittings. As one gains experience, operations may be performed in larger areas at a single sitting.

ASEPSIS

Dentists have been prone to ignore asepsis, arguing that one is dealing with a septic field, which field cannot be made aseptic. This may be granted; but the patients are quite immune to their own sepsis, whereas they may be very susceptible to the sepsis of others. The mistake of contaminat-

ing the field and then blaming the form of treatment for the bad results should not be made. All instruments should be sterilized just prior to operation and precaution should be taken that they do not become contaminated except with the sepsis in the field of operation. One should be sure that all towels and gauze are autoclaved.

TECHNIQUE OF OPERATION (LOWER ANTERIOR)

The operative area should be swabbed with 10 per cent mercurochrome and anesthetized from cuspid to cuspid. A little anesthetic deposited in each interproximal gingiva will greatly aid in controlling hemorrhage. The field should be blocked off with exodontia sponges.

Instrument No. 1 is passed between the left cuspid and lateral, and the edge sawed toward the gingiva. With a push and pull motion the instrument is worked down through gum tissue until hard bone is encountered both lingually and labially. Then each interproximal space is treated in succession. The gum will then show five perpendicular cuts, the lower end of each cut representing the bone line.

With instruments Nos. 4, 5, or 6, an incision is started on the lingual at the gingival border of gum tissue on the distal third of the left cuspid, and the incision is curved downward to a point level with the bottom extremity of the first cut, then continued to the same position on the next cut, and so on until the right cuspid is reached, at which point the incision is terminated as it was started. A similar incision is next made on the labial. After the loose gum tissue is removed, instrument No. 1 is again used, but this time as a curet and scraper. As a curet, all soft tissue is removed, and an effort is made to reduce the alveolus and bone in such a manner that the outer border of the bone will be slightly lower than the central portion. Any portion of bone remaining on the labial or lingual of the teeth should next be removed by instruments Nos. 7, 8, and 9. These instruments, together with No. 10, will remove adherent matter, such as serumal calculus, dead peridental membrane, and dead cementum. Instruments Nos. 11 and 12 can be used for finishing touches.

While sponges are still in place, Wondrpak is applied according to directions provided, being sure to mix it thick. The sponges can now be removed and the patient dismissed.

This operation on the lower anterior teeth will consume only a few minutes. The patient will have suffered practically no pain and postop-

³Black: Paper read before the Illinois State Dental Society, Peoria, Illinois, May, 1919; *J. N. D. A.*, February, 1920, p. 134.

⁴Much of this material thus far is taken from Doctor Black's paper, some of it in his own words. From here on, however, the procedure follows that of Doctor A. W. Ward more closely. It should be mentioned that Doctor Black has improved his technique since 1919.

Fig. 4—Instrument 4, which, together with instruments 5 and 6, is used to cut gum tissue, the lower extremity of perpendicular cuts being used as a guide.

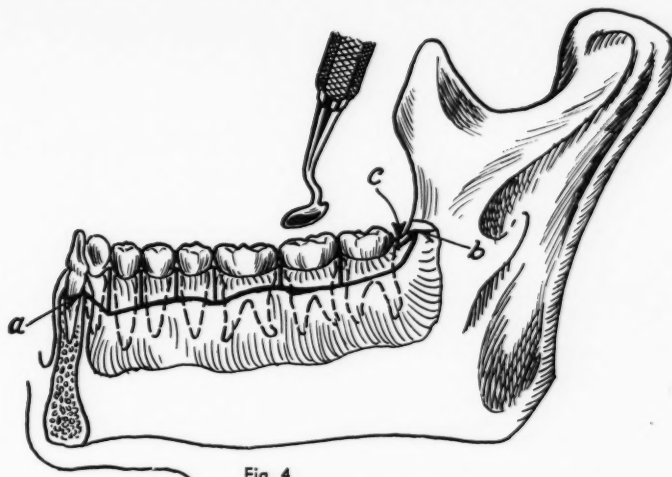


Fig. 4

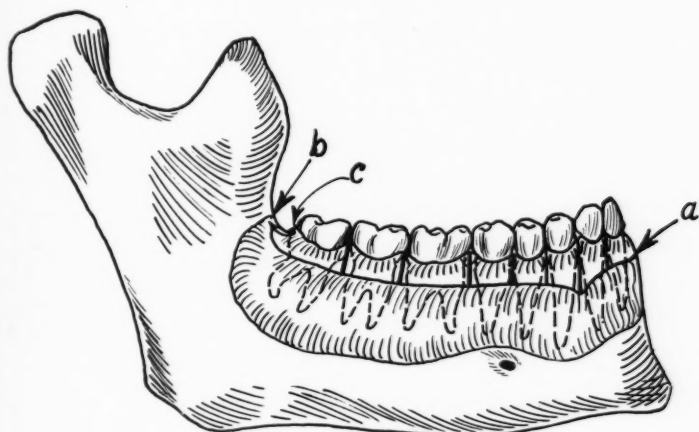


Fig. 5—Buccal surface in same case and procedure as described in Fig. 4.

Fig. 5

Fig. 6—Same case showing gum tissue removed by use of instruments 7, 8, and 9.

At this point instruments 1, 2, and 3 are used to remove soft adherent tissue in interproximal spaces, and also for the purpose of trimming down alveolus as desired. Instruments 7, 8, and 9 are used for removing such exposed portions of alveolus as shown at X, Y, Z, together with dead periodontal membrane and cementum, serumal calculus, and other deposits on buccal and lingual surfaces. Instrument 10 is used for removing the same dead tissues and deposits on the proximal surfaces of the roots. Instruments 11 and 12 are used for finishing touches.

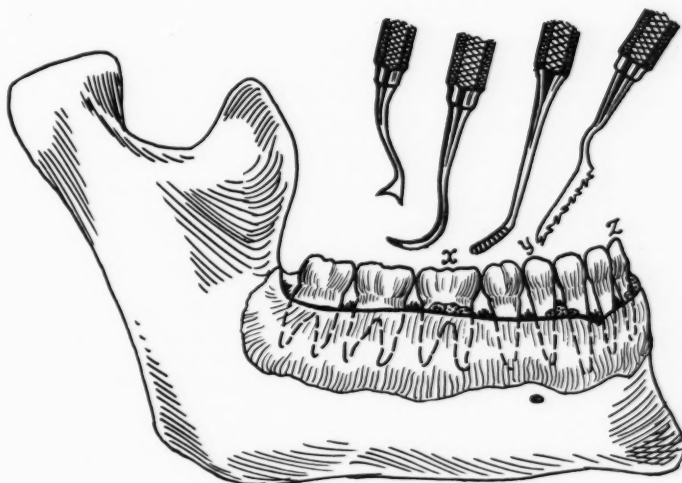


Fig. 6

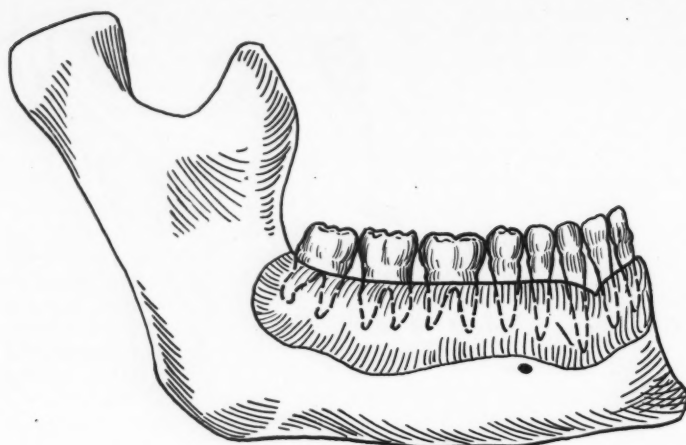


Fig. 7

Fig. 7—Appearance in same case after gum tissue, dead peridental membrane and cementum, together with all deposits, have been removed. This is the proper appearance when ready to place Wondrpak.

Fig. 8—Wondrpak in place, applied according to directions received with material.

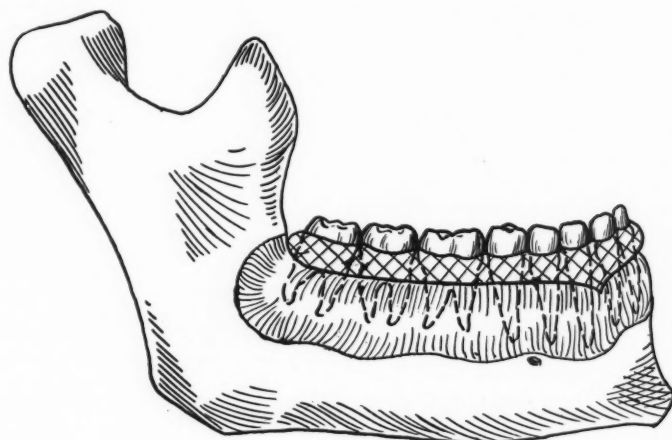


Fig. 8

erative pain will be slight. The patient should return in one or two weeks for the removal of Wondrpak. At this sitting a light polishing of the teeth will be in order. A new gum tissue will be forming over all exposed bone, the teeth will feel rather naked, but not unduly sensitive. In four weeks from the date of operation, a fine, new and healthy gum tissue will be had; the interproximal spaces will be large and open, and easily kept clean. At this time a very thorough prophylaxis should be given.

The procedure in other parts of the mouth is similar to that in the lower anterior, with some exceptions. Distal to the posterior tooth, great care should be taken to extend and curve the incision so that no pocket will be left. Instrument No. 6 is used in completing the incision in this region. On the upper jaw, palatal side, the knives should be so held that the gum tissue is cut on a bevel, forming an obtuse angle with the teeth, thus reducing the shoulder to a minimum.

The upper six anterior teeth are the most difficult to operate on from an esthetic standpoint. The pockets are usually deeper on the palatal side in this area, and the saw curet is so used that the labial plate of bone is reduced as little as possible, making no effort to have the center of the alveolus most prominent. A tapered alveolus in some of these cases is thus obtained. Another complication in this area is the presence of the anterior palatine foramen. When in doubt as to how far to go here, it is better to make an error of omission rather than one of commission.

When extraction is done in the field of operation, the gum tissue is sutured and covered with Wondrpak.

One should not wait until the teeth are waving around, until the pockets have passed the bifurcation of multi-rooted teeth, until pus is flowing freely all around the mouth, or until all other means of treatment have been exhausted, before surgical intervention is attempted. The fact should be recognized that almost all pockets

call for surgical intervention. The operation should be done while there is still a possibility of worth while results.

This plan of eliminating the pockets has greatly simplified the management of those cases that were most difficult and unsatisfactory, as previously treated. Teeth that have been loose have become firm and remained so. Patients generally express gratification at being free from intermittent attacks of sore teeth which are symptomatic of recurrent infection. Many teeth, which would otherwise be extracted to remove the menace of systemic infection, may be safely retained.

As experience increases in this procedure, one will find new avenues for its application presented daily. For example, bridge abutments can more properly be prepared by removing all traces of pyorrhea at the time of extraction. This will apply also in preparing a mouth for partial dentures. In fact, surgical eradication of pyorrhea will become a revelation.

The Editor's Page

WALTER BAGEHOT, the famed English political scientist, believed that a system of checks and balances was necessary to keep the activities of governments on a high plane. A strong minority party acts as a balance against the majority party. In organizations in which there is little or no opposition, whether they are governments or professional societies, we may expect a decadence of vital function. Wherever there is strong opposition one may expect to find vigorous action and worth while accomplishments. Indifference, apathy, and indecision of the party in power do not flourish in the face of a well organized minority.

Occasionally, we hear dentists who decry what they call the "petty politics" of dental societies. To be sure, pettiness in politics should be discouraged, and, for that matter, in any department of thought or action. What these men probably mean is that they dislike to see the overt acts of politics in many dental organizations. They admit that officers must be elected; that programs must be formulated; that cliques and factions are likely to develop. These mild dissenters argue that a form of political action is necessary, but they object to the degradation of the scientific and the professional aspects of a dental organization by objectionable political activity.

What, then, constitutes "petty politics"?

First, in the field of human relations we find men who are, like Caesar, "ambitious." They never dodge a headline; they are forever in the foreground, clamoring; they trample on toes in their wilful haste to the place in front. Often, they are men of ability; sometimes, they are mental pygmies. These men want recognition whether they deserve it or not. They will conspire and connive with others to be placed in office. It is "petty politics" to advance men in dental societies merely because they want the office, or are "good fellows," or because they have some questionable seniority rating.

Second, it is "petty politics" to approach the problems of dental life with an emotional point of view. We have seen men elected to office because they cried louder and longer over some issue, real or imaginary, than did

their opponents. We have seen other men swept into high office on a pure demagogic appeal heated with impassioned oratory. We have known of men who were elected to office because they capitalized on the class fears and phantoms of the dental group.

Generally speaking, the dental profession opposes (and rightly) state and so-called panel dentistry, corporate practice, and pay clinics. For example, suppose two men are seeking the office of president of an important dental society. One opposes the forces against individual practice vehemently and emotionally, and adopts the slogan "Dentistry First." (After the manner of the dubiously successful slogans: "The Full Dinner Pail"; "America First"; "Bring Back Prosperity.") The other candidate takes a calm and clear attitude. He suggests that all important subjects should be studied carefully and scientifically, and that professional men should not be stampeded into herd action. The election would likely be determined before the ballots were cast—a landslide for the oratorical, slogan-coining candidate.

Professional men should fear the back-slapping, loud-talking, backroom politician as they do any other lethal drug, and treat him as such: tightly stopped, labeled, and in a position on the back shelf.

Third, let whoever is derelict to the best interests of the scientific and professional activities of a dental society for the sake of his own political expediency be classified as one playing the petty political game. To keep important clinicians from appearing on programs as political reprisal, and to permit unworthy essayists to appear in satisfaction of political indebtedness are vicious and petty practices. And these forms of abuse are not unknown.

The dentist who wishes to prepare himself for the higher circle of thought and affairs may be interested in these words of Bagehot's:

"In order to know institutions, you must know men; you must be able to imagine histories, to appreciate characters radically unlike your own, to see into the heart of society and assess its notions, great and small."

A COMMON INTEREST BETWEEN THE ORTHODONTIST AND GENERAL PRACTITIONER

W. T. CATE, D.D.S.
Fort Smith, Arkansas

IN special problems, the orthodontist can be of help to the dentist in general practice.

Some time ago, an orthodontist made the statement that he never treated a patient who was more than 11 years of age. He was concerned only with the mechanical problems involved. There is a psychologic aspect that is equally important which should not be overlooked.

In all but two of the cases presented here,

the patients were beyond the average age for orthodontic intervention. The three oldest patients showed a marked inferiority complex. The abnormal self-consciousness disappeared when the defects of the mouth were corrected.

Older patients watch the progress of the treatment that is instituted with interest; they willingly cooperate with the orthodontist, and are grateful for the efforts to help them.

Case 1



Fig. 1 (Case 1)—In a girl, aged 14, a roentgenogram showed that the buds of the permanent left lateral and cuspid were missing. The temporary lateral and cuspid had been extracted. An appliance was adjusted, and the space partly closed. The dentist inserted a facing attached to a three-quarter inlay which was cemented to the first bicuspid. The appliance was adjusted again, and the space was closed. A Hawley retainer was given to the patient to wear at night. Two years later the teeth had not changed position.

Case 2

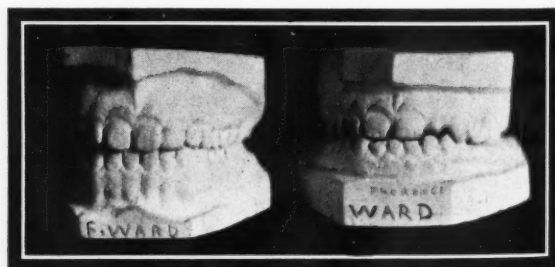


Fig. 2 (Case 2)—Orthodontic classification: Angle's Class III, subdivision 2.

In a woman, aged 22, the six anterior teeth were moved, making a space between the first bicuspid and cuspid on each side. The spaces were closed by cantilever fixed bridges attached to gold inlays in the first bicuspids. These appliances also acted as retainers to keep the teeth in alignment. A porcelain jacket crown was put over the imperfect lateral. The last models were made three years after the restorative work was completed.

Case 3

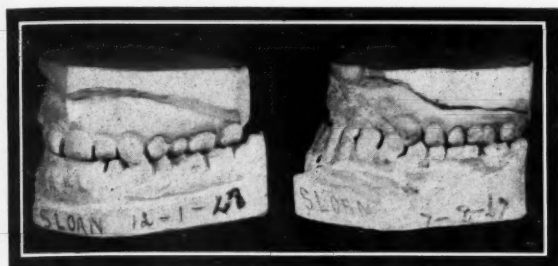


Fig. 3 (Case 3)—Angle's Class III, subdivision 1. The models show a case of extreme mesio-occlusion of the mandible in a man, aged 27. A plate was made to fit over the lower teeth to raise the bite. Bands were cemented to the molars. A heavy stiff arch bar was fitted from the molars, resting against the six anterior teeth. The teeth were ligated to the bar with number 26 wire. As the patient lived too far away to return for frequent treatment, he was given a wrench and instructed how to tighten the regulating appliance. The maxillary teeth were in position in five months. When the front teeth closed normally, there was a space of more than 3 mm. between the upper and lower bicuspid and less than 1 mm. between the first molars. The second molars were in occlusion.

Gold crowns were placed on the bicuspid and first molars on each side of the mandible, as shown in the model.

The patient presented an extreme case of inferiority complex that completely disappeared with the marked change in his appearance.

Case 4

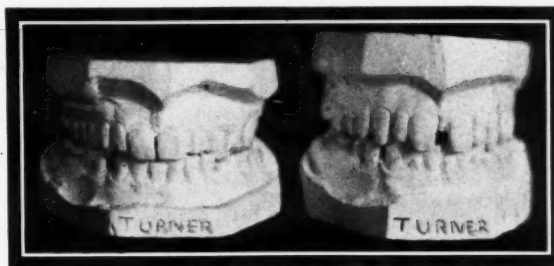


Fig. 4 (Case 4)—A man, aged 23, had had the first molar on the left side of the maxilla extracted as a child. The anterior teeth had floated back and filled the space, leaving a space at the median line instead. After several methods had failed, a jack screw was used to bring the anterior teeth together. Bands, with tubes, were cemented to the right first bicuspid and the left central. These were connected by a threaded bar with nuts that were gradually turned until the space was closed. The lateral was moved with a labial arch and finger spring.

The cuspid, however, could not be made to move anteriorly; thus, a space was left between the left lateral and cuspid. A bridge abutment was constructed on the cuspid to which was attached a lateral facing. The fixed-cantilever bridge, then, filled the space and likewise acted as a retaining appliance.

The last model was taken a year from the time the treatment was completed.

Case 5



Fig. 5 (Case 5)—A roentgenogram, in a girl, aged 15, revealed a missing right lateral. The two centrals had floated until the space was almost filled.

The arch was widened. The centrals were moved to their normal positions. The dentist then inserted a lateral that was attached to an inlay in the cuspid. The treatment was completed with intermaxillary pressure. A Hawley retainer was given the patient to wear at night.

The patient was seen more than a year after completion of the corrective measures, and the position of the teeth had not changed.

Case 6

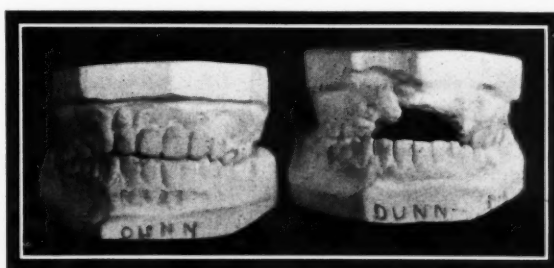


Fig. 6 (Case 6)—An operation was performed in a case of harelip and complete cleft palate in a girl, aged 13, with fine results. Several months later, an appliance was adjusted for expansion of the right side of the maxilla. The teeth were moved until they articulated with the mandible. A plate was made for restoration. Private lessons in expression resulted in marked improvement of speech.

INFECTIONS OF THE MOUTH

CASPER M. EPSTEIN, M.D., D.D.S.

Chicago

THE question of oral infections has long been a stumbling block to the profession, not so much from the standpoint of treatment as from the standpoint of diagnosis. Down through the ages lesions have occurred in the mouth, on the buccal and labial mucosa, on the palate, and on the tongue, and it has not been without some mental perturbation that this problem has been encountered.

LUDWIG'S ANGINA

Ludwig's angina is an acute, diffuse cellulitis of the floor of the mouth. It has the terrifying mortality of about 40 per cent.

Owing to the fact that in normal mouths there are myriads of organisms, any bacterial growth might be expected to be the causative factor; however, most frequently streptococci are the offending bacteria, and next in frequency are the staphylococci. The prognosis is more favorable if the staphylococci are the etiologic germs rather than the streptococci.

Clinical Features—The initial swelling is acute and spreads rapidly. Within from twelve to twenty-four hours the entire floor of the mouth is involved. The inflammation also involves the front of the neck, and, because of this, the area between the borders of the mandible is a hard mass. This area and the floor of the mouth are boardlike in rigidity. The two areas are as sensitive as they are rigid. Difficulty in breathing may be due to one of two factors or even to both: (1) the edema may spread to the larynx, and (2) the inflammation may be so great and the edema may have spread to the surrounding tissues to such an extent that the oral cavity is shut off from the pharynx.

Pain is marked and swallowing is difficult. The constitutional symptoms are those that usually attend a febrile condition. The temperature in these cases is sometimes as high as 105° F.

Treatment—Immediate and heroic surgery offers the only hope for recovery in Ludwig's angina.

Following the extraction of teeth, especially lower third molars, acute infections are sometimes seen. These

usually take the form of a phlegmon in the retromolar area with swelling and definite fluctuation. If seen early there is no difficulty in making the diagnosis. The treatment for this condition is the same as for a phlegmon in any other part of the body; namely, incision and drainage.

ACUTE ALVEOLAR ABSCESS

There are two forms of the acute condition of alveolar abscess: (1) acute, apical pericemental abscess, and (2) acute dento-alveolar abscess.

In the chronic form there are (1) the chronic, periapical abscess with a sinus, (2) chronic, periapical abscess without a sinus, and (3) chronic, periapical abscess discharging through the root canal.

Clinical Features—The acute dento-alveolar abscess begins suddenly and is usually of rather short duration. The symptoms, however, are severe with the usual manifestations of acute inflammation. Pus usually appears within from twenty-four to forty-eight hours. With the formation of pus, the pain becomes more intense and takes on its characteristic throbbing. If the abscess is not opened surgically, the pus will escape through the avenue offering it the least resistance. It may form a local sinus, or it may penetrate the tissues and escape at some distant point, such as the nose, cheek, or antrum. The teeth affected are usually loose. If the acute condition subsides without an apparent opening for the outlet of pus, escape into the maxillary sinus is, of course, probable. The general symptoms of febrile conditions prevail, the temperature not infrequently reaching 103 or 104° F. There is tenderness of the tooth to percussion and on mastication.

Complications—Complications, such as cellulitis and osteomyelitis, are not uncommon. The results may be disastrous if not cared for correctly. Most of these conditions, however, yield to proper treatment.

Fig. 1 shows a case of acute periapical abscess of the right upper central incisor. The upper lip is swollen and all anatomic markings are obliterated by the edema.

CHRONIC PERIAPICAL INFECTIONS

Chronic periapical infections do not produce any outward symptoms unless a sinus is present or an acute exacerbation presents itself. These conditions are the offending factors of dental foci as related to systemic disease.

VINCENT'S INFECTION

Vincent's infection, or ulceromembranous stomatitis, is seen more now than prior to the World War. Whether this disease is more prevalent now or whether better diagnoses are being made is a question still in dispute. I am of the opinion that the condition is being recognized more than previously.

This is an infectious disease and has no respect for age. The youngest patient I have treated was an infant, 16 months of age. The disease was transmitted to the child by the father through kissing.

Clinical Features—The characteristic lesion is a sensitive and painful, superficial ulcer of irregular shape and covered by a whitish gray membrane which is easily removed. When this membrane is removed, the bleeding is profuse.

The onset of the disease is sudden, the odor of the breath is fetid; salivation is increased; a temperature of 100 to 102° F. is usually present; there is anorexia, and the cervical lymph glands are usually swollen.

The fusiform bacillus and the spirochete are always present in symbiosis, and the revealing of the organisms clinches the diagnosis.

It must be remembered that the fusiform bacillus and the spirochete of Vincent are present as normal flora of the mouth and the mere demonstration of a few of these organisms microscopically is not sufficient evidence to make a diagnosis. The clinical manifestations must also be present although the severity of the symptoms may vary in degree in each case.

Treatment—There are several methods of treating Vincent's infection. Oxygen producing drugs find the greatest favor with silver nitrate and tincture of iodine following. The arsenicals and aniline dyes have been



Fig. 1

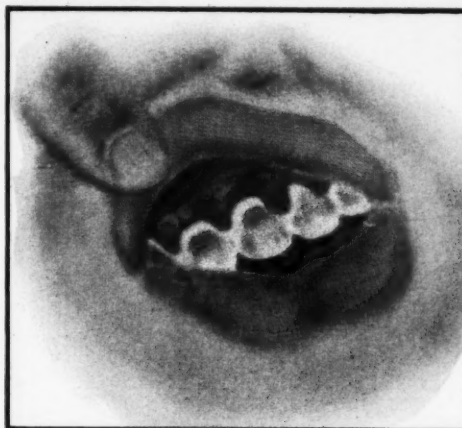


Fig. 2



Fig. 3

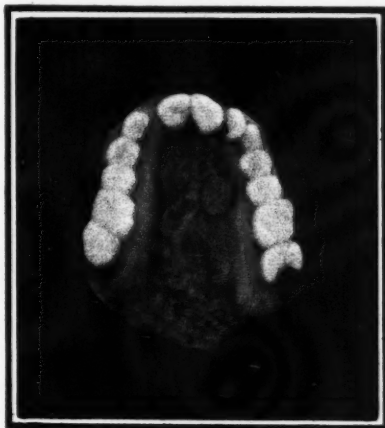


Fig. 4



Fig. 5

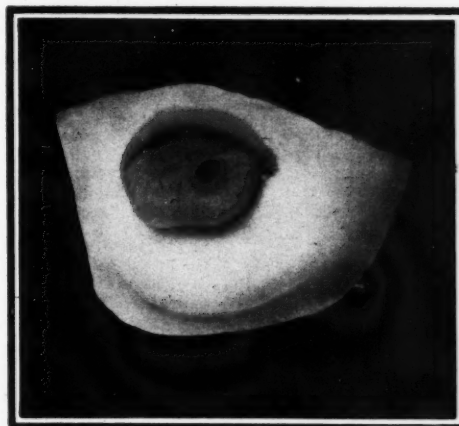


Fig. 6



Fig. 7

Fig. 1—Acute periapical abscess of the right upper central incisor. The upper lip is swollen and all anatomic markings are obliterated by the edema.

Fig. 2—Vincent's gingivitis.

Fig. 3—Acute infectious osteomyelitis with tremendous amount of bone destruction. An associated cellulitis required drainage. The safety pins seen in the picture were used in the rubber tube drainage to prevent losing the tube.

Fig. 4—Tuberculosis of mucous membrane of the hard palate revealing tubercles present in surrounding tissues (Zinsser).

Fig. 5—Tuberculosis of the posterior part of the oral cavity (Zinsser).

Fig. 6—Chancr of the tongue with positive Wassermann reaction (Zinsser).

Fig. 7—Syphilis of the lips and tongue revealing hypertrophied mucous patches, teeming with spirochetes (Zinsser).



Fig. 8



Fig. 10

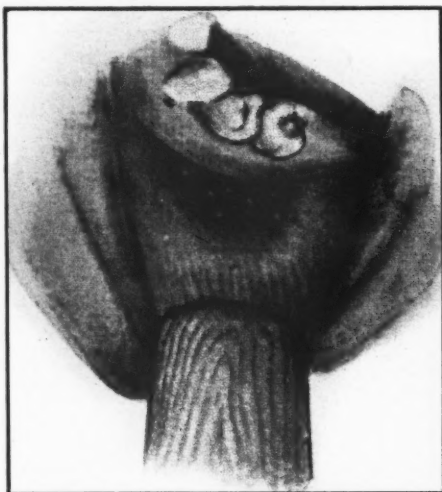


Fig. 12



Fig. 14

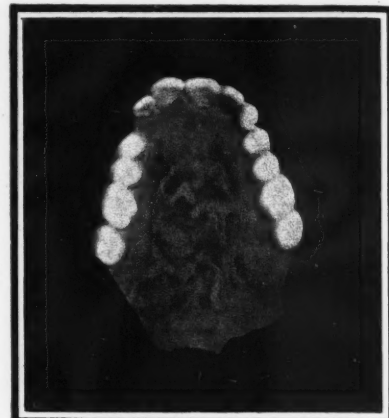


Fig. 9



Fig. 11

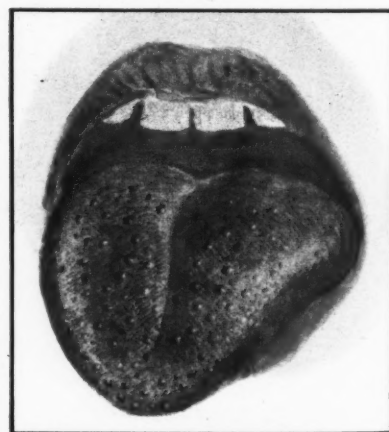


Fig. 13

Fig. 8—Syphilis of lips and tongue showing ulcerated mucous patches in contradistinction to the hypertrophied mucous patches shown in Fig. 7 (Zinsser).

Fig. 9—Ulcerated gummata of the hard palate with acute inflammation of remaining soft tissues of the palate (Zinsser).

Fig. 10—Tertiary syphilis with perforation of the hard palate. Surgical closure may be accomplished under favorable conditions.

Fig. 11—Early stage of cancrum oris with the beginning of a gangrenous area. When this condition does occur it often follows measles or typhoid fever in children.

Fig. 12—Koplik's spots of measles.

Fig. 13—"Strawberry tongue" of scarlet fever.

Fig. 14—Diphtheritic membrane involving the fauces on one side, uvula, and soft palate (Zinsser).

used by some with marked success. In some cases I have used the aniline dyes as therapeutic adjuncts, with excellent results.

ACUTE INFECTIOUS OSTEOMYELITIS

Acute infectious osteomyelitis usually occurs in the young and the middle-aged. It develops suddenly with severe deep-seated pain and exquisite tenderness over the affected area. There is more or less marked disturbance because of the high temperature. As a rule, there is marked edema of half the face with inflammation and swelling of the buccal mucosa and gums. Usually, the teeth are loosened and may even come out. Sometimes the jaws are fixed and mastication and speech become difficult, and often impossible. Salivation is disturbed, and usually the cervical lymph glands are enlarged. The course is frequently rapid and in most cases ends favorably. In some cases the entire jaw becomes necrotic. Of all cases of osteomyelitis of the jaw, only 1 per cent occurs in the upper jaw, because of the cancellous nature of the maxilla, favoring early drainage and recovery.

Fig. 3 is a roentgenogram showing the extensive osteomyelitis in a young man who had two lower bicuspid teeth extracted because of an acute abscess. There was a great deal of trauma during the operation. On the following day, the pain continued and the swelling increased in size. The symptoms became worse. The temperature became septic, and at one time when the temperature was 106° F. the patient was delirious. When I was called to see the patient all the remaining lower teeth were loose and pus exuded from the gums. Under general anesthetic, the jaws were curetted and drainage was established. Those teeth that could not be saved were extracted.

Necrosis of the jawbone is not a primary disease but is secondary to osteomyelitis, which may be of traumatic, infectious, or chemical origin. The peculiar and interesting thing to note about necrosis of the jaw is that the sequestrum varies in color with the type of the infection. In syphilis it is usually black and soft; in phosphorous poisoning, it is, as a rule, white, hard, and brittle. It has the appearance of pumice stone, and there emanates from it a strong odor of phosphorous.

TUBERCULOUS LESIONS OF THE ORAL CAVITY

Tuberculous lesions of the oral cavity occur most frequently on the tongue, although they may also occur on the palate, buccal mucosa, and lips.

It is most frequently seen in patients with pulmonary infections. The oral lesions, if typical, rise slowly, and usually with progressive pain. The pain is intensely burning while eating and because of this mastication and speech may become difficult.

As a rule, the lesion starts out as a round, red nodule, from the size of a pea to that of a hazelnut, and is usually singular. Later, the ulcer becomes fissured, the edges are thin and undermined, and the base is grayish yellow. Finally, rhagades spread from a small, confluent defect to a large, flat ulcer with an irregular, dentate border. These differ from syphilitic lesions by the presence of pain and the absence of prominence. For conclusive evidence of the diagnosis, biopsy and bacteriologic examination should not be omitted.

In Fig. 4, the diseased mucous membrane is intensely congested, with a rough, granular surface. Scattered over it are hollowed-out, small, irregular ulcers. The floor of the ulcers is covered with a greenish yellow pus. The mucous membrane of the soft palate is thickly covered with tubercles. Tubercle bacilli were not found in the pus.

Fig. 5 shows a case of tuberculosis of the mucous membrane of the fauces, soft palate, and uvula. The entire mucous membrane of the fauces, soft palate, and uvula is congested, edematous, and swollen. The surface of the mucous membrane is finely granular. On the uvula and soft palate there are several small, hollowed ulcerations with undermined edges (Fig. 5). It can be seen that these ulcerations arise from the confluence of the numerous miliary tubercles. The process gradually extends over the normal mucous membrane.

SYPHILIS

The mouth manifestations of syphilis are interesting. The chancre may be situated anywhere in the mouth, more frequently on the lip, less commonly on the tongue, the palate, and the tonsils. If the chancre is in any one of these locations, there will be at the same time an enlargement of the lymph glands of the submaxillary region.

In the secondary stage, mucous patches are often found on the tonsil, uvula, soft palate, the inner surfaces of the lips, the sides of the tongue, and the buccal mucosa. There may even be a generalized gingivitis.

In the tertiary stage there may be osteoperiostitis of the jawbones, particularly the maxilla and the palate. In such instances there is usually a recession of the gums, loosening of the

teeth, and later, perhaps, necrosis. When the hard palate is involved, a painless swelling first appears; this softens and breaks down, exposing the bone, which may be thrown off as a sequestrum, causing a perforation in the palate. The septum and nasal bones are sometimes destroyed, causing the characteristic saddle-nose deformity. Gummata sometimes, although rarely, develop in the tongue.

On the left side of the tongue in Fig. 6 is an elliptical tumor which involves the musculature. It is firm and gradually merges with surrounding normal tissues. Its brownish red surface is eroded and there is a furrow running through it. The surrounding tissues are not congested. The submaxillary lymph nodes on both sides were involved. On pressure, serum exuded from the lesion in which the spirochetes were found. The patient did not know how he had acquired the lesion but admitted intercourse eight weeks previously. The Wassermann reaction was positive.

In Fig. 7 the mucous membrane of the tongue and lower lip presents small, hypertrophied, mucous patches which are raised in some places, irregular in size and shape, and tumor-like in appearance. Deep, ulcerated furrows can be seen passing through some of these patches.

Fig. 8 shows an elliptical, gray, mucous patch on the left side of the lower lip. It is raised above the surrounding surface, the edges are ulcerated, and on its surface are ulcerated furrows. There are two ulcerated excoriations on the upper lip. On each side of the lingual frenum is a flat, irregularly-shaped ulceration with a yellowish gray coating.

The Wassermann reaction was positive.

Fig. 9 shows a case in which all of the mucous membrane covering of the hard palate was acutely inflamed, swollen, and dark red in color. Throughout may be seen many elongated, superficial ulcerations which are covered with a grayish yellow coating. In some places the ulcers have coalesced.

On superficial examination these ulcers may be mistaken for tuberculous ulcers of the mucous membrane; however, on closer examination, it will be seen that the tuberculous ulcers are more hollow, and the walls are sharper and more distinct. The floor of the ulcers is often covered by a breaking down of some of the tubercles, and not uncommonly there may be some of the tubercles still intact around the ulcer.

Fig. 10 shows a case of tertiary syphilis with perforation of the hard

palate and periostitis of the alveolar process. This case is of ten years' duration. Two years prior to the perforation there was a swelling of the hard palate. Later this broke through with the result seen in Fig. 10. When this occurred the patient sought treatment, and under energetic, antisyphilitic treatment, the process of destruction was abated. During the course of this treatment the patient developed a periostitis of the maxillary alveolar process with the subsequent loss of two incisor teeth.

This type of perforation is best closed by means of surgery whenever possible.

GANGRENOUS STOMATITIS

Gangrenous stomatitis, also known as noma and cancrum oris, is a progressive gangrene of the mouth which is most apt to occur in children. It spreads with frightful rapidity, usually is unilateral, and 90 per cent of the patients die.

A hard infiltration first appears, which later softens and breaks down forming an ulcer. Soon the full thickness of the cheek is involved. The lymph glands are swollen, salivation is increased, and the fetor is extreme.

Later, the whole of the external cheek swells and becomes edematous with gangrene and perforation following. Death usually ensues in three or four days.

MEASLES

In measles an eruption appears as a rule, a day or two before a skin rash is evident, on the buccal mucosa in the region of the lower first molar. These spots are slightly elevated, dark red, and about the size of a pinhead. In the center of each spot is a minute white or bluish white speck (Fig. 12).

SCARLET FEVER

The circumoral pallor and the "strawberry tongue" are important diagnostic aids in scarlet fever (Fig. 13). They usually appear on the first or second day of the disease and before the appearance of the skin rash. The circumoral pallor and the strawberry tongue are still present, however, after the rash has become evident.

DIPHThERIA

In the early stages of diphtheria, a thin, grayish coating is seen in the faucial area. Later, the typical, tenacious, dirty gray membrane, which

may spread across the vault to involve the soft palate, uvula, and even the opposite fauces, replaces this first coating (Fig. 14).

CONCLUSION

The oral manifestations of mouth infections¹ are numerous and easily confused. Their early recognition is of prime importance, and is often the means of avoiding much suffering. Many of these lesions are so similar in appearance that it becomes necessary to employ diagnostic measures, other than superficial inspection, to reach a final decision as to the nature of the disease. Some of these infections do not have mouth manifestations as often as others, but the mere fact that oral manifestations sometimes do make their appearance in the less common diseases of the mouth is sufficient reason to be familiar with them. Often a diagnosis without these observations is impossible. Because of this, the recognition of these symptoms in the mouth may sometimes lead the way to life-saving measures.

¹Zinsser, F.: Diseases of the Mouth, New York, Allied Book Company; Brown, G. V. I.: Oral Diseases and Manifestations, Philadelphia, Lea and Febiger, 1918; Mead, S. V.: Diseases of the Mouth, St. Louis, The Mosby Company.

A DENTAL KINK

WALTER G. HINE, D.D.S.
Hollywood, California

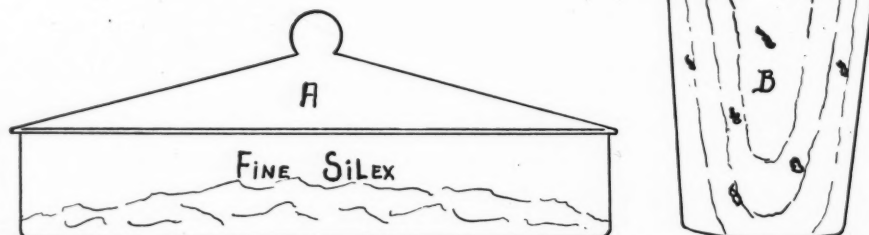


Fig. A—A covered dish of air-floated Sillex. Fig. B—A large cork, which when wet and dipped into the Sillex will effectively polish corroded instruments.

CAVITY PREPARATIONS FOR ABUTMENTS AND INDIVIDUAL RESTORATIONS

J. R. SCHWARTZ, D.D.S.
Brooklyn, New York
(Second Installment)

POST PREPARATION ON UPPER BICUSPID

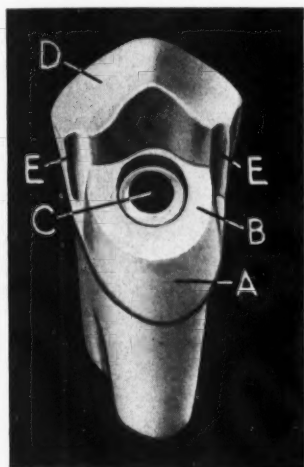


Fig. 14—Post preparation on an upper bicuspid. Entire buccal portion of the tooth was sound and intact; A, reduction of lingual; B, preparation of pulpal floor; C, preparation of canal to receive the post; D, beveled buccal cusp; E, proximal grooves.

THE post preparation for an upper bicuspid is the evolution of a preparation for a condition that often appears when the lingual cusp of a bicuspid has been lost either through caries or accidental trauma and when the pulp has become involved and must be removed. When root canal therapy has been completed and the canals have been filled, the preparation is made in the following manner:

1. On the proximal surface of the remaining tooth substance, slices or aprons are made extending to the gingival border.
2. The remaining lingual portion is dressed down as at A, Fig. 14, and the occlusal or pulpal floor is prepared as at B.
3. The preparation of the canal for the post C is made with root canal reamers and a countersink facer with a diameter of 3 mm. and the cutting blades only on the face of it.
4. The occlusal portion of the buccal cusp is beveled as at D, and on the

proximal surface two grooves are made with a number 27 mounted cylinder stone, as indicated at E.

5. When the preparation is completed, a suitable length of threaded wire, 14 gauge and 14 per cent platinumized, is cut and fitted to the canal with a portion of it extending beyond.

6. An impression is taken in a copper band filled with compound; the post is removed with the impression.

7. An amalgam die is made. The procedure for the wax pattern has previously been described for this technique.¹

M. L. D. PREPARATION WITH POST IN CANAL

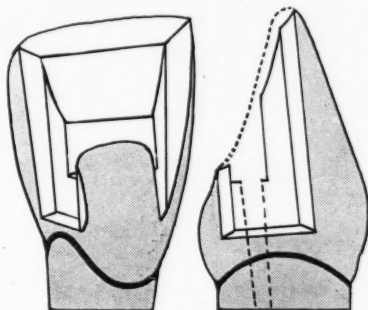


Fig. 14A—M. L. D. preparation with post in canal.

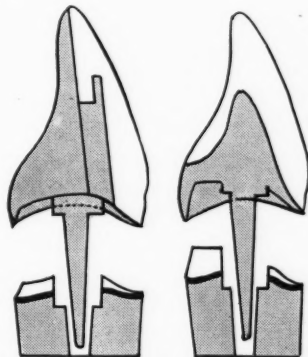


Fig. 14B—Root face preparation for cast base or post crowns. At the left, an all porcelain crown; at the right, a Steele's facing.

¹Schwartz, J. R.: Cavity Preparations for Abutments and Individual Restorations (First Installment), THE DENTAL DIGEST, Vol. 38, pp. 137-143, April, 1932.

MOLAR ROOT PREPARED TO RECEIVE CAST BASE

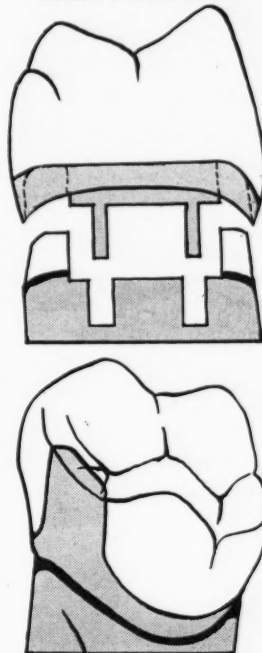


Fig. 14C—Molar root prepared to receive a cast base carrying an all porcelain crown with proximal extension upward for solder contact.

DISTO-OCCLUSAL PREPARATION ON LOWER FIRST BICUSPID



Fig. 15—Disto-occlusal preparation on lower first bicuspid.

There are several teeth that offer only limited possibilities for well anchored abutments; the lower first bicuspid is one of these. Its features are smallness of bulk; lingual inclination, and small and short lingual cusp. There are instances, however, when the lower first bicuspid must be called into service, such as when it is needed to carry an inlay in which is to rest the movable or flexible joint of a small fixed restoration.

1. With a carborundum disc, a slice is made on the proximal surface adjoining the edentulous space.

2. With suitable size crosscut fissure burs, a step is made connecting the gingival floor and the occlusal floor. The occlusal extension is carried to the opposite sulcus with the cutting done well toward the buccal cusp because it is the thickest portion of the tooth.

Some may question the wisdom of this preparation and prefer an M. O. D.; but practice has proved that in an M. O. D. there is danger of fracture of the lingual cusp, whereas it is safer to leave the remaining lingual and proximal walls intact.

3. When bur-cutting is completed, all surfaces are gone over with mounted points, numbers 27 and 68, for smoothness, and the bevel is made continuous with the slice surface with any one of the following mounted points: number 50½, 73, 72, 40½, or 54.

This bevel feature is carried out on all preparations presented in this article.

THREE-QUARTER VENEER ON LOWER FIRST BICUSPID



Fig. 16—Three-quarter veneer on lower first bicuspid.

When occasion demands that the lower first bicuspid serve as a fixed abutment, the usual procedure is followed except that the smallness of the tooth makes it necessary for the preparation to be extended or increased to include the crest of the buccal cusp on which a V-shaped groove is cut to join the proximal grooves. This feature permits the greatest mass of tooth substance to be included in the preparation with the maximum amount of retention.

HOOD PREPARATION ON LOWER SECOND BICUSPID: BUCCAL CUSP LOST

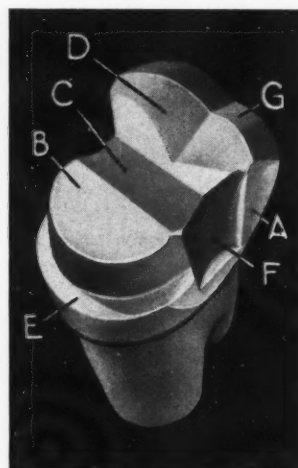


Fig. 17—Hood preparation on lower second bicuspid; buccal cusp was lost; A, proximal slice; B, C, D, reduction of occlusal bulk; E, gingival shoulder; F, proximal groove; G, beveled lingual cusp.

1. The usual slices are made on the proximal surfaces (Fig. 17 at A).

2. The remaining occlusal bulk is stoned down in the manner shown at B, C, and D.

3. A shoulder is made at E with fissure burs or square-edged cylinder mounted points.

4. With mounted points, number 27 or 28, a shallow groove is made as at F (Fig. 17).

5. The lingual cusp is now beveled, G, and made to join the proximal surfaces.

If the lingual cusp is missing, the same procedure is followed.

As usual, an amalgam die is made from a compound impression.

THREE-QUARTER CROWN ON AN UPPER BICUSPID

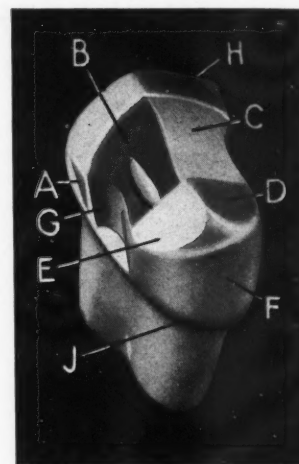


Fig. 18—Three-quarter crown on an upper bicuspid; A, proximal slice; B, C, D, E, reduction of occlusal with contours conforming to the cusp planes; F, reduction of lingual surface with an inclination from the gingival to the occlusal; G, proximal cut; H, beveled buccal cusp; J, lingual-lingual junction without a shoulder.

1. Both proximal surfaces are sliced as shown at A, Fig. 18.

2. The occlusal surface is dressed down. Sufficient clearance is allowed for all positions or movements of the mandible.

It will be noted that the occlusal cutting conforms to the cusp planes B, C, D, and E (Fig. 18), and is done both to conserve tissue and to increase retention. If the occlusal surface is cut down to a flat plane the surface contact of the abutment piece is reduced.

3. The lingual surface is dressed down with an inclination from the gingival to the occlusal (Fig. 18, at F).

4. The grooves, G, are started with number 2 or 3 crosscut fissure burs and completed with mounted points, 27 or 28. This will give a more substantial groove retention than the conventional slender channel.

5. The buccal cusp is beveled, H, to protect the enamel at this point from being shattered.

6. The linguo-lingual junction, J, is finished to affect a featheredge in the finished casting without a shoulder.

THREE-QUARTER VENEER CROWN
ON LOWER MOLAR

Fig. 19—Three-quarter veneer crown on lower molar.

The preparation for the three-quarter veneer crown on a lower molar is similar to that described for the preparation shown in Fig. 18, and may be followed accordingly.

PROXIMO-OCCLUSAL PREPARATION
WITH PIN RETENTION ON
BICUSPID

Fig. 20—Proximo-occlusal preparation with pin retention on bicuspid.

The proximo-occlusal preparation with a pin retention on a bicuspid is indicated on short teeth where there is insufficient tooth bulk to obtain proper frictional resistance in the casting.

After the usual M. O. or D. O. preparation is made, the pin channels are made with a number 3/0 or 1/2 round bur, such as are used for the pinledge, in the positions indicated in Fig. 20.

Pin wire is used for the pins; it is cut and bent as for the pinledge, and the pins are inserted in the channels.

PROXIMO-OCCLUSAL PREPARATION
WITH PIN RETENTION FOR
SHORT MOLARS

Fig. 21—Same preparation as shown in Fig. 20 except for short molars.

An impression is taken in a copper band and an amalgam die is made.

The preparation shown in Fig. 21 is the same as that shown in Fig. 20, but it is used for short molars. The preparation may be used either as an abutment for fixed bridgework or as a piece to carry the female section of a precision attachment.

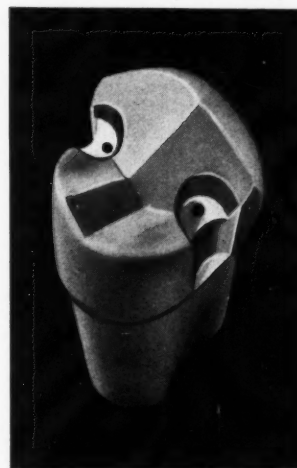
THREE-QUARTER VENEER PREPARATION
ON BICUSPID WITH ADDI-
TIONAL PIN RETENTION

Fig. 22—Three-quarter veneer preparation on bicuspid with additional pin retention.

The preparation shown in Fig. 22 is indicated for either short teeth or those of small bulk.

When the veneer preparation has been completed the proximal grooves are extended in step fashion on the occlusal surface. The pin channel is then made on this step.

M. O. D. PREPARATION
ON MOLAR

Fig. 23—M. O. D. preparation on molar.

Since the early days of casting, the M. O. D. preparation has held a fascination for all those who tinker around the mysteries and intricacies of the wax pattern and its elimination from the mold. Contraction or distortion was the fly in the ointment which presented itself because of the three-surface character of this preparation with its varying masses and the diametric centers of contraction. Today, the problem is not difficult, because a better knowledge and understanding of both materials and procedures are producing excellent results for all practical purposes.

The M. O. D. preparation to be fully efficient should be sufficiently inclusive to act as a safeguard and protection to the tooth rather than as a wedge, which is often the tendency, with ultimate disaster to the tooth.

1. The proximal surfaces are sliced down to the gingival border and to the buccal and lingual zones.

2. The channel is cut across the occlusal surface from mesial to distal along the median fissure with a knife-edged wheel.

3. When the proximal surfaces are free of contact, and there is open access to the tooth, the steps may be started with a number 27 or 28 mounted point. When the surfaces are in contact, a number 1 or 2 crosscut fissure bur is used, working down toward the gingival. Once space is provided, the space is widened out, as shown in Fig. 23, making a corresponding width across the occlusal with excursions buccally and lingually in the direction of the fissures.

4. The marginal bevel is pronounced and made continuous with the proximal slice. Should the occlusion or ar-

tication indicate undue stress or wear, then it would be wise to extend the preparation on the occlusal surface to the bucco-occlusal and linguo-occlusal line angles to insure adequate protection to the enamel.

5. The final step, it is emphasized, should be the finishing or polishing of all surfaces of the preparation to insure smooth surfaces.

A danger that is encountered in three-surface preparations is the failure to have the walls parallel. Visualization and fundamental knowledge, fortified by persistent training through application, are the only guides that can be suggested to obtain satisfactory results.

The questions are often asked, "What is the best method of making walls or grooves parallel? Is there some practical mechanical appliance with which paralleling can be done?"

Coordination of the mind and the trained hand to guide the dental engine and its appurtenances are the only "devices" that can be offered to make walls or surfaces of a tooth parallel.

DISTO-BUCCO-OCCLUSAL PREPARATION ON UPPER MOLAR

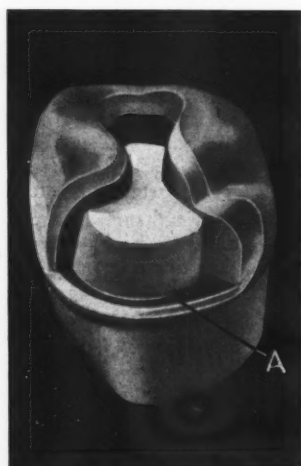


Fig. 24—D. B. O. preparation on an upper molar; A, channel along the gingival step.

The disto-bucco-occlusal preparation on an upper molar is one of a group comprising the following: mesio-buccal-occlusal; mesio-bucco-linguo-occlusal; linguo-occlusal, and disto-bucco-linguo-occlusal. These preparations have been evolved as a result of having to prepare teeth with

one or more cusps fractured and broken off.

Anchored retention is obtained by extension to the occlusal surface including all the fissures and sulci. At times it is possible to sink a channel along the gingival step, A, about 1 mm. below the margin and adjacent to the proximal wall.

VARIATION OF THE M. O. D.

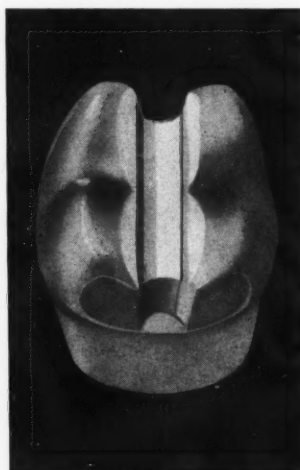


Fig. 25—Variation of M. O. D.

There is no box step on the proximal surfaces in the preparation shown in Fig. 25, which is a variation of the M. O. D. A groove, such as would be made in a veneer crown, extends across the occlusal surface in the form of a channel instead of the step.

TWIN LOCK PREPARATION ON LOWER MOLAR

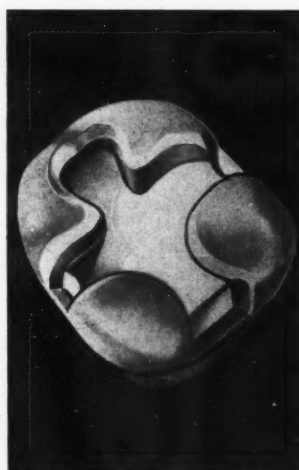


Fig. 26—Twin lock preparation on lower molar.

Fig. 26 shows a variety of the M. O., including all the fissures and sulci on the occlusal surface. The preparation extends buccally and lingually along those fissures, and a step is made on the corresponding surfaces.

VARIATION OF TWIN LOCK PREPARATION ON LOWER MOLAR

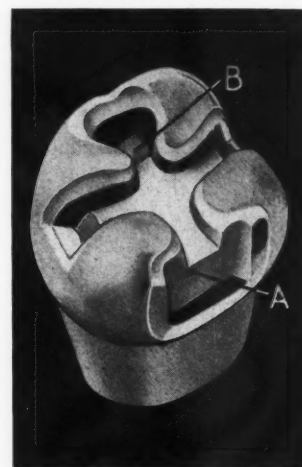


Fig. 27—Variation of preparation shown in Fig. 26; A, pronounced box step on mesial; B, pit depression of 2 mm. on occlusal.

VARIATION OF THE M. O. D. ON UPPER BICUSPID

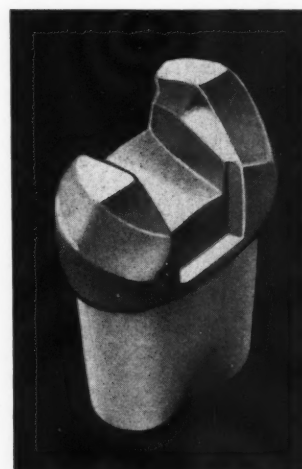


Fig. 28—Variation of the M. O. D. on an upper bicuspid.

The lingual cusp having been lost, the preparation (Fig. 28) is extended over the remaining stump and half way down the lingual surface. The preparation may be likened to a combination of the M. O. D. and the three-quarter veneer.

OCCUSAL VIEW OF M. O. D. VARIATION ON UPPER BICUSPID

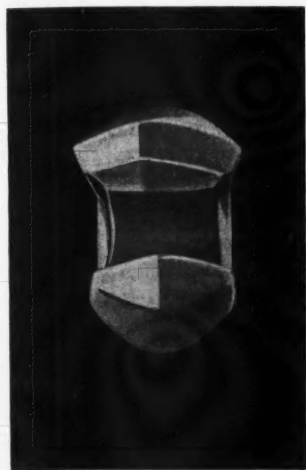


Fig. 29—Occlusal view of Fig. 28.

SLICE LOCK PREPARATION ON UPPER MOLAR

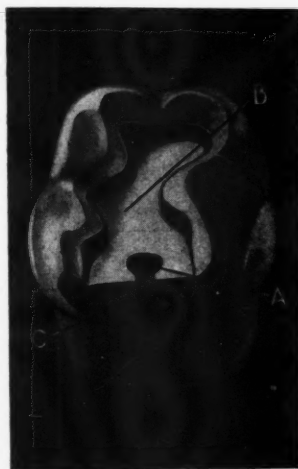


Fig. 30—Slice lock preparation on upper molar; A, oval lock; B, occlusal extension; C, channel.

The slice lock preparation on an upper molar is a variation of the M. O. D., which was devised by Doctor K. W. Knapp. The box step is eliminated and the oval lock (A, Fig. 30) is substituted.

1. A proximal slice is made extending to the gingival border.

2. A step is cut on the occlusal surface as shown at B. The occlusal step need not always extend completely across but may terminate and only include the mesio-buccal sulcus and fissure.

3. With a number 3 fissure bur, a channel is cut to extend mesio-distally

about twice the thickness of the bur, in the position indicated at C.

4. With a number 1 fissure bur placed at the distal wall of the channel the cutting is done bucco-lingually, forming an oval, as shown in Fig. 30.

This preparation is exceedingly retentive, and can be depended on as an efficient abutment piece for fixed bridgework. It requires a minimum amount of tooth cutting.

SLICE LOCK ON LOWER MOLAR

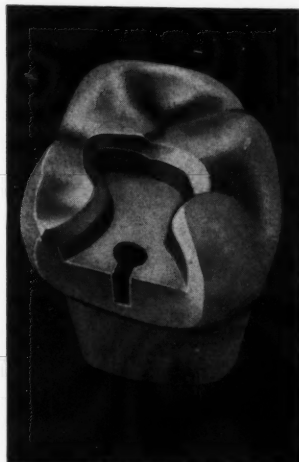


Fig. 31—Slice lock on lower molar. Preparation extends only half way across occlusal surface. Procedure is the same as for Fig. 30.

MACBOYLE PREPARATION ON UPPER MOLAR

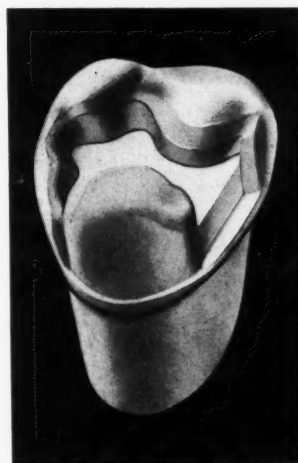
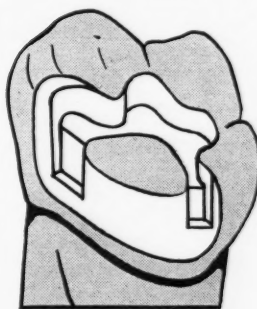


Fig. 32—MacBoyle preparation on upper molar. A variation of the M. O.; preparation extends from distal sulcus along the disto-lingual fissure and down the lingual surface where it joins the prepared surface which begins at the mesial step. Preparation does not include the mesio-lingual cusp which appears exposed when casting is in place.

THREE SURFACE MACBOYLE PREPARATION



CROSS SECTION OF THREE SURFACE MACBOYLE PREPARATION

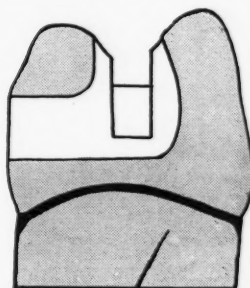
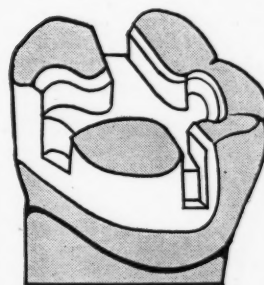


Fig. 32A—Three surface MacBoyle preparation.

FOUR SURFACE MACBOYLE PREPARATION



CROSS SECTION OF MESIAL ASPECT OF LOWER MOLAR

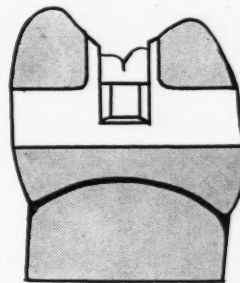


Fig. 32B—Four surface M. O. B. L. MacBoyle preparation; cross section of mesial aspect of lower molar.

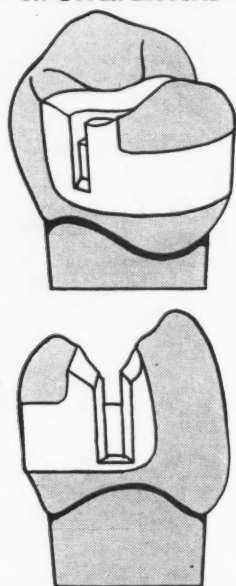
FOUR SURFACE PREPARATION
ON UPPER BICUSPID

Fig. 32C—Four surface preparation on an upper bicuspid.

TWIN LOCK PREPARATION ON
UPPER LEFT FIRST MOLAR

Fig. 33—Twin lock preparation on an upper left first molar.

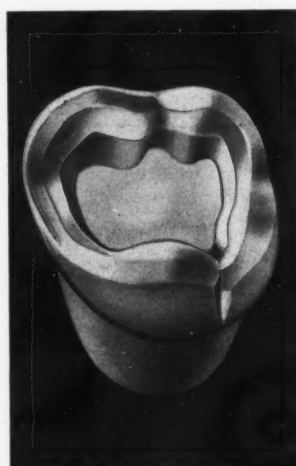
INWARD AND OUTWARD BEVEL ON
COMPLETE OCCLUSAL PREPARATION

Fig. 34—Complete occlusal preparation with an inward and outward bevel. This preparation has been used in groups of teeth (posteriors) in conditions in which the bite had to be opened.

CONCLUSION

Doctor W. E. Cummer in his works on partial denture service calculated through a mathematical formula that there are 65,536 possible combinations of partial denture designs. In like manner the number of possible cavity preparations could be computed. One need not, however, resort to such confusing amounts to attain the desired end. Given a set of fundamental preparations, each dentist in his own way, guided by basic principles of procedures, could satisfy the average requirements of good dental restorations.

The highly developed character of restorative dentistry today leaves no room for hazy conceptions of the various phases or steps that enter into the construction of appliances. It is essential to have definite convictions and the courage to see them through.

few days. Some of them are of stainless steel and they, too, tarnish somewhat. How can I keep them looking bright?

ANSWER—The first principle to be observed in the care and sterilization of instruments is never to put an instrument in the sterilizer that has not first been carefully scrubbed with soap and water and rinsed thoroughly. This may seem like an extra amount of work but is necessary to prevent just the difficulty experienced.

A spot or smear of blood on an instrument that is thrown into the sterilizer without first being cleaned will result in an unsightly spot or smear which takes vigorous rubbing with Bon Ami, powdered chalk, or flower of pumice to eradicate. If this procedure is carefully followed and stains still remain, then the water is to blame; it probably contains certain chemicals that are injurious to polished metals. A chemical analysis of the water used may be secured. This will indicate what can be put into the water used for the sterilizer to counteract the corroding quality. There are a number of preparations on the market for the purpose which can be secured at any reliable drug house or chemist's. Instruments need constant care. Under the most favorable circumstances they should be polished at least once a week.

QUESTION—There is a chemical solution that will dissolve modeling compound if boiled in it. I want it to clean impression trays of modeling compound by boiling the trays in the solution. I have read about it in some journal. What is the name of the solution?

ANSWER—I do not know the name of the solution to which you are referring. Perhaps one of our interested readers will inform us. In the meantime, we suggest boiling with soap powder which will also remove compound from trays.

DENTAL ASSISTANTS AND SECRETARIES

ELSIE GREY

Have you a particular method, or have you a time saving short-cut that lightens the work or makes for greater efficiency in the office? You may help many who are beginners—and you know how you needed help during your first few months in a dental office. Perhaps you need help now. Write to Elsie Grey—she will help you.

Address all communications to Elsie Grey, in care of THE DENTAL DIGEST, 1125 Wolfendale Street, Pittsburgh, Pa.

QUESTION—How can I prevent instruments from becoming stained in the sterilizer? I have been using sterilizer tablets but the instruments discolor even though I polish them every

There has recently come to our attention an educational magazine for dental assistants containing material of practical value to the young women who are associated in the conduct of dental offices. It is *The Dental Assistant*. It is published by the Educational and Efficiency Society for Dental Assistants, First District, New York. The Managing Editor is Mrs. Juliette A. Southard, Founder and Past President of the American Dental Assistants Association, 174 West Ninety-Sixth Street, New York.

RADIODONTIA DURING CHILDHOOD

ITS DIAGNOSTIC VALUE

F. BLAINE RHOBOTHAM, D.D.S., F.A.C.D.
Chicago

Operative Dentistry—The contacts between deciduous molars and between the second deciduous molars and the first permanent molars are broad, and, therefore, these proximal surfaces are susceptible to dental caries. In its initial stage, caries that begins under the contacts is difficult to detect with explorers; it may extend pulpward to the point of pulp involvement before it is discovered. Roentgenograms made on the bite-wing films will disclose cavities on proximal surfaces of teeth at their onset.



Fig. 1—Initial proximal dental caries. Mesial surface of first permanent molar in boy, aged 13.

During the period when there are both deciduous and permanent teeth in the mouth, the contacts are so frequently faulty that there naturally exists a greater susceptibility to proximal decay. Here, also, the diagnostic value of the bite-wing roentgenograms is evident.



Fig. 2—Caries; distal pit. Occlusal surface of lower second permanent molar. Extensive decay under pit cavity in first permanent molar in girl, aged 14.

The distal pits of the occlusal surfaces of the lower first and second permanent molars are frequently involved with caries as a result of persistent operculum tissue. The roent-

genogram will disclose cavities there even before the soft tissue over them has been absorbed or removed.



Fig. 3—Roentgenogram showing depth of caries in relation to pulp in permanent molar in patient, aged 13.



Fig. 4—Caries under cement filling (aged 9).

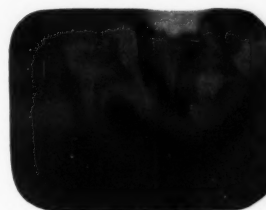


Fig. 5—Caries under pit cavity (aged 7).

In all pit and fissure diagnoses the roentgenogram accurately discloses the real depth and the extent of the caries if it is present (Fig. 3). One of the common errors practiced in children's dentistry has been the treatment of questionable pits and fissures with silver nitrate, or covering them with black copper cement. If the caries has attacked the dentin, these methods only hide what is going on beneath (Fig. 4). I have frequently found the entire crown portion of first permanent molars undermined before the patient has been made aware of it through pulpitis. The value of the

roentgenogram in these cases is readily understood. In careless cavity preparation in which all of the caries is not removed before the placement of a filling, caries will go on under the filling (Fig. 5). Too much dependence is frequently placed on germicidal filling materials or in drugs used in the treatment of questionable dentin. Follow-up roentgenograms will check these cases satisfactorily.

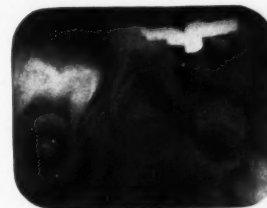


Fig. 6—Variations in size of pulp chambers (aged 5).

During childhood the size of the pulp chambers of the deciduous and permanent teeth are so variable that the roentgenogram is almost indispensable as a guide in cavity preparation.

There is only a short period between the time of completion of the dentin of the deciduous teeth and the beginning of its slow absorption. The average age for this period varies with races and physiologic and pathologic



Fig. 7—Physiologic resorption of deciduous roots (aged 8).

conditions to such an extent that it is of no practical value to be familiar with it. Frequently, a deciduous molar is firm *in situ* after the entire coronal dentin has been absorbed. The sizes of pulp chambers in young permanent teeth are inconstant, thereby jeopardizing operative procedures. All of the foregoing difficulties may be minimized and an intelligent technique assured by the use of roentgenograms.



Fig. 8—Pathologic resorption of deciduous roots (aged 8).



Fig. 9—Uneven resorption of deciduous roots (aged 7).



Fig. 10—Resorption alongside of deciduous root (aged 10).



Fig. 11—Diffuse infection involving adjacent tooth (aged 6).

Root Canal Therapy—One of the greatest blessings that have come to the aid of the dental profession in its dealing with the treatment of root canals has been the roentgenogram. There is no period in life when it is so indispensable as during childhood. The resorption of deciduous roots may be either physiologic or pathologic (Fig. 7). Contrary to the general opinion, pathologic conditions are as frequently the cause of rapid resorption of deciduous roots as they are the cause of delaying or actually stopping resorption (Fig. 8). Multirrooted teeth do not always have even resorption of their roots, for in many instances one root may be completely gone before the others show any signs of resorbing (Fig. 9). Deciduous roots do not always begin resorbing at their apexes, but often resorb on their inner sides, half way toward the crown or even directly under the bifurcation (Fig. 10). In the last two instances the resorption may uncover the pulpal tissue, thus making the pulp susceptible to bacterial invasion. These invasions may come through breaks in the soft tissues that connect with the fluids of the mouth, or from the diffusion of infections from an adjacent infected area (Fig. 11).

The taking of subsequent roentgenograms of root canal fillings is the only sure method of measuring success or failure of root canal procedures (Fig. 12).

There is need for much improvement in the care of taking roentgenograms of deciduous teeth, for unless the angulation is carefully studied and a clear roentgenogram obtained, there is difficulty in getting an accurate picture of the roots. In fact, when resorption has taken place on the inner sides of the roots, I doubt whether our present technique is sufficient. The use of a stereoscope, however, is helpful and will show more than the flat view.

These facts are pointed out to emphasize the need of the roentgenogram prior to any root canal therapy other than emergency treatments.

Prosthetic Dentistry—Anterior bridges are frequently placed on deciduous teeth prior to the eruption of



Fig. 12—Infection following trauma with treatment (aged 11).

the upper permanent central incisors. It is necessary in these cases to check bone development and the movement of the unerupted teeth at regular intervals. Facings are usually butted against the labial gum tissue and therefore have a tendency to cause the permanent teeth to erupt lingually to their normal position. Unless these bridges are carefully watched, they may cause a serious malocclusion. If the permanent incisors erupt behind the bridge unnoticed, much harm may occur to the enamel by collections of food debris (Fig. 13).

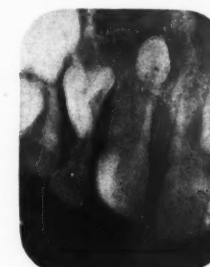


Fig. 13—Lingual eruption caused by supernumerary tooth (aged 8).

In cases in which the second deciduous molar is lost before the erup-

tion of the first permanent molar several prosthetic appliances have been devised to safeguard occlusion properly. Of course, the roentgenogram is indispensable for this work. This is also true in the construction of all types of space maintainers.

Orthodontia—Prior to any attempt at orthodontic treatment, full mouth roentgenograms are indicated. The routine study of these roentgenograms includes many difficult problems of interpretation. Pathologic conditions are carefully sought out first, as their elimination is essential before any other treatment is begun. Then, the determination as to the necessity for extraction of deciduous teeth is undertaken (Fig. 14). Careful examination for cavities is accomplished by the use of bite-wing films. Unless every cavity is found in teeth that are to be banded, serious decay may go on unnoticed.

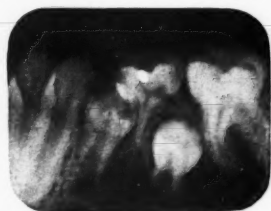


Fig. 14—Too long retention of deciduous molar (aged 9).

The more complicated conditions seen in roentgenograms during this period are the unusual supernumerary teeth, small fragments of deciduous roots that are lodged between the roots, and ankylosis of the roots of teeth.



Fig. 15—Supernumerary tooth (aged 11).

The most common type of supernumerary tooth is the peg-shaped one that erupts between the upper central incisors. There are many other types, varying in size from very small to quite large, which are difficult to recognize in the roentgenogram. This is true because they may lie directly behind a permanent tooth and appear only as a blur. If serious consequences to occlusion are to be avoided, it is necessary to discover these

teeth in the early stages of their development so that they may be removed before the harm has occurred.

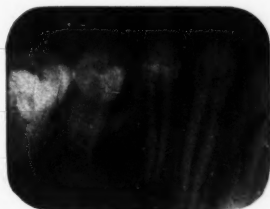


Fig. 16—Root fragment of deciduous tooth (aged 11).

Small fragments of deciduous roots become impacted between the roots of permanent teeth and result in throwing the teeth out of occlusion. They often cause open contacts that invite food impactions which may be the etiologic factor in dental caries or a pyorrhea pocket. These small remains of roots may be found with difficulty and demand the clearest of roentgenograms. In these cases as in many others in which detail is essential, the help of a magnifying glass is highly recommended.

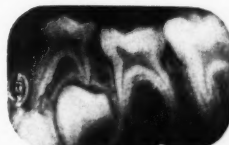
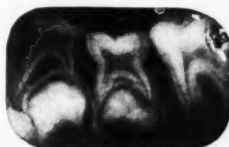


Fig. 17—Ankylosed deciduous teeth (aged 8).

It is not uncommon to find deciduous molars ankylosed. In some cases, the bicuspid beneath such a tooth is present and in rather a large percentage of cases it is congenitally missing. In either event the extraction is difficult and often requires surgical methods.



Fig. 18—Ankylosed permanent central incisor (aged 14).

Ankylosis of the root or roots of permanent teeth seems to take place during the eruptive period of the tooth and prevents the tooth from coming into full occlusion. Months have been wasted by orthodontists in a futile attempt to move an ankylosed tooth. Careful roentgen examination will reveal the peculiar lack of periodontal tissue and the dense bone arrangement

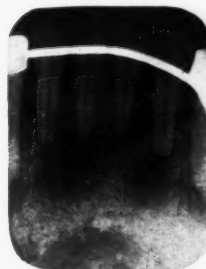


Fig. 19—Effects of the use of quadrilateral rubbers in orthodontia (aged 16).

about the roots of ankylosed teeth. If the tooth is tapped with a metal instrument it will give a true metallic sound.



Fig. 20—Resorption due to undue lateral pressure (aged 15).

Not only is it necessary to have a good set of roentgenograms prior to orthodontic treatment but in many cases it is necessary also to check conditions during treatment. I have in mind two types of cases in particular. When quadrilateral rubbers are used in closing an open bite, great care must be used to avoid too rapid movement (Fig. 19). This may be observed in the roentgenograms by what appears to be apical abscesses at the root end of each anterior tooth. In the other instances there may be an actual resorption of the root ends brought about by undue lateral pressure of the appliance.

Oral Surgery—Mention has been made regarding surgical extractions made necessary by ankylosis of either deciduous or permanent teeth and the aid of roentgenograms. All extractions are surgical procedures, and the roentgenogram may be of great aid prior to or during the extraction of teeth. As an example, the extraction of a lower deciduous molar may be simplified in cases in which there has been no resorption of the roots, with virtual impaction of the roots between the unerupted bicuspid crown and the erupted adjacent teeth. In such an emergency the crown of the tooth may be cut into through the bifurcation, and the segments removed with elevators.



Fig. 21—Lack of resorption resulting in difficult extraction (aged 10).

The roentgenogram is essential as a guide in the surgical removal of the abnormal attachment of the superior labial frenum tissue (Fig. 22). A chapter could be written on the relation of the maxillary bones, the age for surgery, and the detail of the technique associated with the roentgenographic interpretation of these cases. It is rarely necessary to consider these cases seriously during the deciduous period. The ideal time for intervention is when the upper permanent lateral incisors are erupting, or at the time of the eruption of the upper permanent cuspids.



Fig. 22—Typical result in abnormal labial frenum cases (aged 12).

Surgical removal of the tissues overlying unerupted upper permanent cuspids, which, because of lack of space,

are moving anteriorly and lingually to their normal position, can be contemplated after roentgen examination. In questionable cases, therefore, when the time arrives for the normal appearance of the upper permanent cuspids, roentgenograms are indicated.

Fractures of the jawbones are not uncommon during early childhood. When these fractures occur during the first two years of a child's life, it is necessary to consider the fact that ossification has not been completed. Owing to the remains of cartilaginous tissue, it is often possible to reduce the fracture without subsequent splinting or wiring. Instead, a wide bandage is used which is passed over the head and under the chin. Healing is usually rapid, and a later roentgenogram will reveal a normal bony development rather than the usual bone callus.

When there is undue delay in the eruption of teeth the roentgenogram may reveal several indications for surgical assistance. The upper second deciduous molar is sometimes impacted under the distal of the first deciduous molar (Fig. 24). The first permanent molar is similarly impacted under the distal of the second deciduous molar. The second bicuspid is not infrequently impacted under the mesial



Fig. 24—Impacted first permanent molar (aged 7).

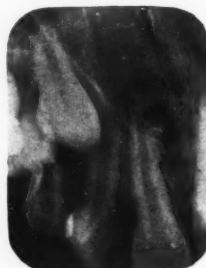


Fig. 23—Malposed upper permanent cuspids (aged 12 to 14).

Fig. 25—Impacted second bicuspid (aged 9).

side of the first permanent molar (Fig. 25). Any one of the permanent central incisors may fail to erupt as the result of cicatricial tissue overlying their incisal edges. Each of these cases requires surgical treatment and the roentgenogram is the key to the situation.

Prior to and following surgical treatment of clefts of the maxillary bones the roentgenogram reveals not only the condition of the bony structures but also the peculiar malpositions of the unerupted teeth.

Tumors, benign or malignant, are not common during childhood, although even carcinoma has been reported. Cysts are not uncommon, however, and their early discovery may prevent a major surgical operation. The healing of bone following an open operation for the removal of large dentigerous cysts is interesting, and roentgenograms are absolutely necessary to careful treatment.

Pathologic Conditions—Although roentgenograms have become routine in the successful practice of dentistry for adults, little use has been made of them by the dental profession generally for the diagnosis of infections during childhood. As a result, relatively few dentists or physicians can interpret a roentgenogram of the childhood period intelligently. The so-called blind abscesses are quite as commonly found at the apexes of deciduous teeth that still have vital though infected pulps (Fig. 26). Abscesses often form between the deciduous roots without roentgenographic evidence at the apexes. Incompleted deciduous or permanent root ends give the appearance of infection, whereas

pathologic conditions do not exist. In young children the foramina are much larger than in adult life, and they are not in the same position. As a result, faulty impressions are gained by the inexperienced diagnostician.

Because of the loose arrangement of the bone, infections may become so diffuse as to spread to several adjacent teeth and involve them. In fact, there is less tendency to the walling-off of the infections and the formation of the so-called pus sacs (Fig. 27). The infection spreads, which, apparently, makes it less severe, because it is not confined by the resistance of dense bone. On the other hand, toxins and bacteria are more readily picked up by the lymph and blood streams. This accounts for the more common occurrence of adenitis and metastatic disturbances during childhood than later in life.

Deciduous roots frequently do not show any serious areas around their apexes, because they may communicate directly with the mouth, either because of the hollow tooth to which they are attached or because the crown portion of the tooth has been entirely disintegrated. In these cases, there are always low grade infections.

Infections at the apexes of deciduous as well as young permanent teeth may be revealed by roentgenograms to be the result of traumatism when there is no other clinical evidence. Babies so frequently fall unobserved that it is well to take roentgenograms of their anterior teeth, at least, early in life (Fig. 12). It will be interesting to note, also, that in many instances, particularly when the apex of the tooth has not fully developed, there will be a discoloration of the tooth without death of the pulp. This is explained by the fact that although a pulpal hemorrhage occurred, there was not passive hyperemia because of the large apical opening.

For the same reason, vitality may persist for a long time after pulps have become infected. The pulp tissue is finally disintegrated by putrefaction, but the process is so slow that the free circulation in the bone is able to carry off these poisons without pain.

CONCLUSION

As a result of these facts, it is clear that frequent roentgen examinations are indicated as an aid in the prevention of focal infections. There are many other uses for the roentgenogram during childhood, but if only those pointed out here were employed as a regular routine in dental practice for children, a great step forward would be made.

Children's dentistry is always preferred to as preventive dentistry. If properly done, it is the only practical form of preventive dentistry. It can be aided materially by the regular and free use of roentgenograms. It cannot be practiced with any degree of perfection without the aid of roentgenograms.



Fig. 26—Blind abscesses from trauma (aged 3).



Fig. 27—Diffuse infections at various periods.

IMMEDIATE DENTURE SERVICE

FRANKLIN W. OTTO, D.D.S.

Chicago

MANY patients are sensitive about the loss of their teeth during the time dentures are being prepared or during the time the mouth is healing. Immediate denture service explained to the patient will give him more courage, and prevent the discouraging situation in which the patient seeks a dentist who makes "plates" a few dollars cheaper.

Immediate denture service has a place in modern dentistry in that it follows the plan of selling service instead of selling dentures like a pair of shoes or an overcoat.

My plan is flexible enough to be modified to fit most conditions.

PROCEDURE

1. A good impression of the mouth before the teeth are extracted should be taken with plaster, modeling compound, or elastic material. The impression must include enough of the labial portion to be useful in making a denture.

2. The shade is then matched, and a mold is selected close to the form and size of the teeth to be extracted in order that the new denture may duplicate the appearance of the natural teeth as nearly as possible.

3. An accurate impression of the opposing teeth should then be taken in modeling compound.

4. A wafer bite consisting of two thicknesses of base plate wax is needed to set the models together.

5. Models are made with the new model plaster or artificial stone.

6. The models are then fitted to

the bite and mounted on an articulator (Fig. 1).

7. A central tooth is cut out from the model down level with the gingival line.

8. The collar of the artificial tooth is ground off to fit the model and fixed into position with wax (Fig. 2).

9. One proceeds thus one tooth at a time until all are replaced by the artificial teeth.

10. The waxing is completed on the labial and palatal portions, only one thickness of base plate wax being used. Because of the thinness of this plate, the use of vulcanite is preferred. Cellophane should not be used on the palatal portion of this plate as it makes it too smooth for retention of the surgical pack to be used later (Fig. 3).

11. The teeth are then extracted, and when the hemorrhage is under control the denture is tried in the mouth.

12. If the case is too high one may adjust and muscle trim with a vulcanite bur.

13. The occlusion is ground in where necessary.

14. The denture should be dried well.

15. A surgical pack cement is then mixed similar to the preparation suggested by Ward in the surgical treatment of pyorrhea (Fig. 4). The formula for the surgical pack is as follows:

Powder: 70% zinc oxide; 30% powdered rosin; .625% asbestos.

Liquid: 80% oil of cloves; 20% olive oil; 100 of 1% (trace) analine red oil (soluble).

16. A sufficient quantity of powder and liquid is mixed on a glass slab and then spread with a cement spatula all over the inner surface of the denture approximately 2 mm. thick. This should be a thick, heavy paste similar to the consistency of a crown and bridge cement mix.

17. The denture with the mix is placed in the mouth, and the patient is told to close the teeth. The excess will squeeze out as a plaster wash.

18. While the teeth are still closed, the excess is wiped off with a cotton sponge and alcohol.

19. The denture is allowed to remain in the mouth until the following day, because the eugenol acts as an anodyne and the pack in the denture as a splint.

20. The next day the mouth may be inspected and washed.

21. The patient may wear the denture as it is for a month until a new pack may become necessary because of shrinkage.

CONCLUSION

The denture may be worn until the operator desires to make the permanent denture. It may even be worn as long as a year if the lining is added to or renewed when necessary. However, the patient should not use a brush on the palatal surface of the denture as this wears off the cement.

The posterior teeth may be extracted a short time before the anterior if there are a great number of teeth present in the mouth, thus giving the posterior part a chance to heal.

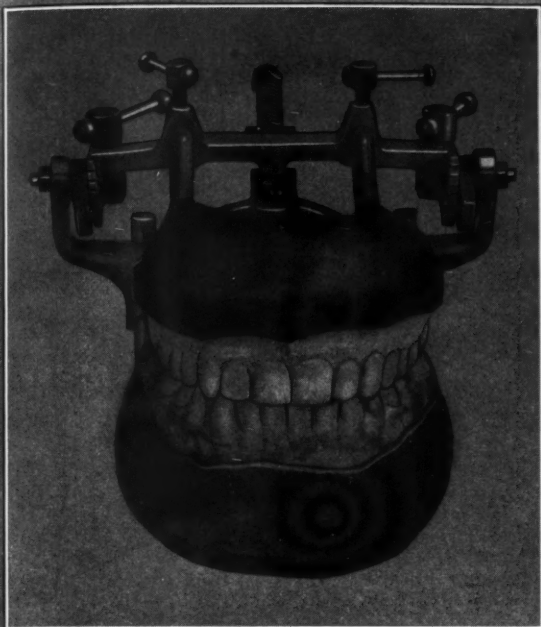


Fig. 1—Articulated models of mouth.

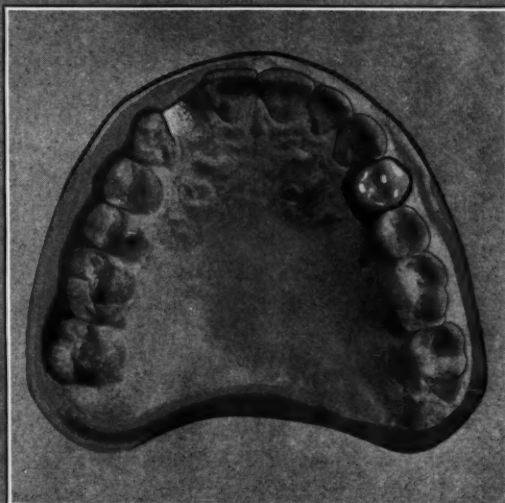


Fig. 2—Lateral tooth cut from model; bicuspid ground and waxed in place.

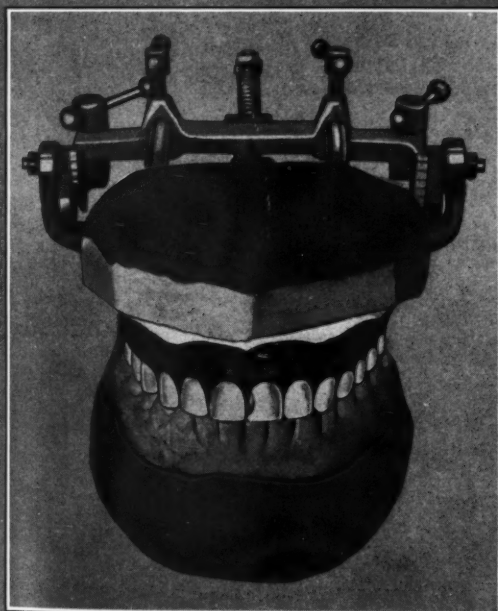


Fig. 3—Upper denture waxed ready for vulcanizing.

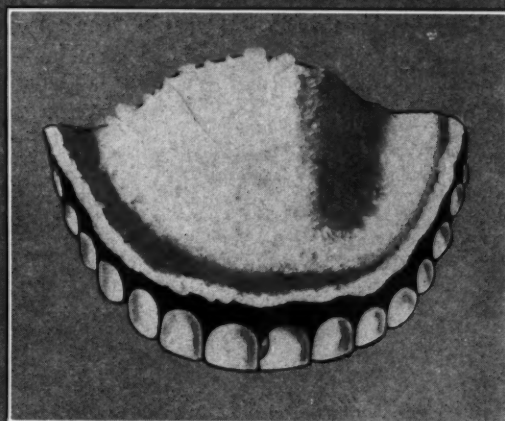


Fig. 4—Surgical pack in place on the palatal surface of the completed denture.

THE DENTAL DIGEST

SIGNAL FIRES

THE COLUMBUS DENTAL MFG. CO.
COLUMBUS, OHIO, U. S. A.

Dr. W. L. MORRIS, PRESIDENT
W. L. MORRIS, VICE PRESIDENT

THE COLUMBUS DENTAL MANUFACTURING CO.
WAGER & BROWN STREETS
COLUMBUS, OHIO, U. S. A.

May 2, 1932

Dear Doctor,

WHAT do you think of these
Porcelain Tissue Contact Teeth?

We will be very glad to have
a letter of commendation or criticism
from you.

Sincerely,

THE COLUMBUS DENTAL MFG. CO.

Steel's
INTERCHANGEABLE
Tru Pontics
THE COLUMBUS DENTAL
MFG. COMPANY
COLUMBUS, OHIO, U. S. A.

Offering New Possibilities In Denture Service with Dresch Open-Bite Removable Restorations

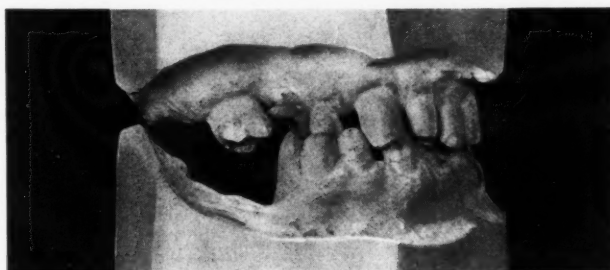
To those dentists who are anxious to deliver something beyond the ordinary type of denture service we earnestly commend an investigation into the use of DRESCH Open-Bite Removable Restorations.

Bite closure is due most commonly to the loss of posterior teeth. When supplying replacements for such cases you should give careful consideration to the bite relationship. If the bite needs to be opened it can most effectively be done with DRESCH Open-Bite Removable Restorations.

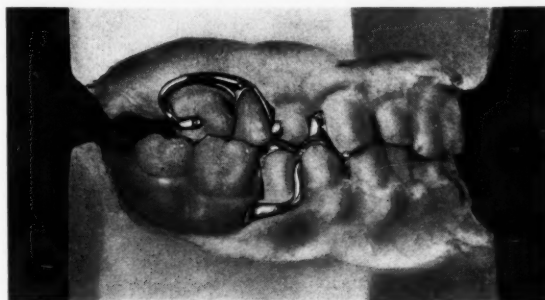
Open-bite work is not an experiment. The past ten years have witnessed remarkable results in the improvement of articulation, temporo-mandibular relationship, greater comfort, improved hearing and facial contour and a general advancement in prosthesis through the use of open-bite work. In the future no progressive dentist will undertake prosthetic restorations without giving careful consideration to the need of establishing the proper bite arrangement.

Believing that DENTAL DIGEST readers will appreciate learning more about this superior type of service we have prepared a very attractive and instructive booklet on the subject of open-bite work. It is fully illustrated and cites numerous case reports. It is yours *free* for the asking. We will be glad also to have you send us models for a scientific diagnosis and report. Send models of both jaws with wax bite in centric occlusion.

Send
for
Free
Booklet



Showing bite closure due to loss of posterior teeth.



Dresch Open-Bite Removable Restoration in place restoring normal bite relationship.



View of Dresch Open-Bite Removable Restoration.

(Or use coupon on page 200)

**THE DRESCH LABORATORIES COMPANY,
Security Bank Building, Toledo, Ohio**

Please send without charge or obligation a copy of "Dentistry Keeps Moving Forward."

Dr.

Address.....

LETTERS

Congratulations on the new DENTAL DIGEST! The February copy has just come to my desk.

I am particularly happy to see the little story about "The Cave People." The splendid way in which it is illustrated will no doubt be very interesting to the little folks who visit the dental office. I wonder if it is possible to collect this material in book form to be used by dental health workers and by teachers who are interested in dental health education as supplementary reading material. Also, it seems to me that this material, collected in book form and illustrated as this is, would be of value to those men in private practice who are catering to children as an added volume to place on the reading table for the little folks.

I should like to collect reprints of this

material in either bound or loose-leaf form as loan material from the Department of Public Health to various school teachers and health workers to add to their supplementary reading material for children in the lower grades.

We hope you will continue to carry a page of this nature in the future.

"Some Typical Questions and Their Answers," beginning on page 61, would be of value as public health literature. This is simplified to such a point that even a layman can understand the contents, and you can readily see why this dental periodical is growing so popular. May it live long and prosper!—L. W. NEBER, D.D.S., Superintendent of Mouth Hygiene, Springfield, Ill.

Reading the *National Geographic Magazine* would, no doubt, give some people

nervous breakdowns if the way pages are numbered bothers them. You will note that the *Geographic*, which, by the way, has some distribution, numbers its pages at the top as well as at the bottom, according to its fancy. DIGEST numbers are at least uniform.

To me an objection of this sort seems very silly and of no consequence whatsoever.—HARRY W. HICKS, D.D.S., Boston

Your new issue is great! Keep up the good work!—J. H. HEINLY, D.D.S., Hailey, Idaho

Since I have seen the January number of the DIGEST I do not wish to miss any issues.—H. H. GANTZ, D.D.S., Albia, Iowa

It's excellent! Keep up the standard you have set and it will force others to improve.—JACKSON SMITH, D.D.S., Los Angeles

I like the new magazine very much and think this is just the right way to get up a publication for a busy dentist.—F. S. LAWSON, D.D.S., Portage, Wis.

A proposition! I desire to subscribe to the very excellent DENTAL DIGEST. But I want the February and March issues. A bargain? If so, keep the enclosed money order for two dollars which is the price of a year's subscription, I believe.—GERALD FITZGERALD, Milwaukee

Your magazine is the best buy of all dental magazines as each issue brings home and clears up at least one point on which one may be weak. Your illustrations are helpful and beautiful. Keep it up.—R. ELION, D.D.S., West New Brighton, S.I., N.Y.

I have withheld comment until after receiving the April DIGEST. I wondered if I could throw a brick at the editors, or a monkey wrench in the machinery. I fail to find anything but praise. It appears perfect, editorially and typographically. I wish you the unlimited success you merit.—ARTHUR R. WHITE, D.D.S., Pasadena

Accept my best wishes for the success of your new and attractive dental magazine.—LOUIS BERMAN, D.D.S., New York

The DIGEST is truly beautiful. From cover to cover it is an innovation. I really believe that in presenting technique as you have, we dentists can gain more real knowledge than by reading hundreds of pages of printed words.—E. R. HART, D.D.S., St. Louis

In plain talk, I don't like it—the new DENTAL DIGEST. I have been a subscriber for a long time and I always found it my favorite journal. It was always welcome and it seems to me there was more in it than in the new issue. I could always turn to just what I wanted.—ROBERT T. DELANO, D.D.S., Wareham, Mass.

May I offer my sincerest congratulations to your organization and to my good friend, Doctor Ryan, for the splendid work of art that you are producing. THE DENTAL DIGEST today is a distinct contribution to contemporary dental literature and, without a doubt, its success is assured.—VERN H. NILSSON, D.D.S., Minneapolis

More than an Anesthetic— Protection for Patient and Surgeon Alike!



SAFE

THE test of an anesthetic is not that it produces insensibility to pain—the real test is its protection of the patient, and the feeling of confidence that it gives you, as a Surgeon, throughout the operation. That's the reason so many leading Surgeons insist on "Ohio" gases.

"Ohio" anesthetic gases are the purest to be had and, consequently, the most potent, and the most dependable. "Ohio" anesthetics protect the physical being of the patient and give you complete confidence that the patient is right, so that your whole attention can be focused on surgical technique.

Like other leading pharmaceuticals, the quality of "Ohio" gases is maintained in sealed, sterilized containers. These seals distinguish the full cylinders from the empty ones and prevent foreign matter entering the valve opening while in transit.

If you would be sure that you are securing the protection of the highest quality anesthetic, specify "Ohio" gases!



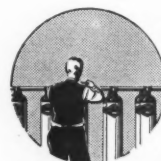
PURE



DEPENDABLE



SEALED VALVES



STERILIZED CYLINDERS



ATTRACTIVELY FINISHED

THE OHIO CHEMICAL & MANUFACTURING COMPANY

"Pioneers and Specialists in Anesthetics"

CLEVELAND, OHIO

BRANCHES IN ALL PRINCIPAL CITIES

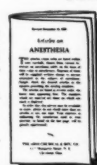


OXYGEN
NITROUS OXID
ETHYLENE
ETHYL CHLORIDE
CO₂-OXYGEN MIXTURES
OHIO CELLOPHANE
SURGICAL DRESSING

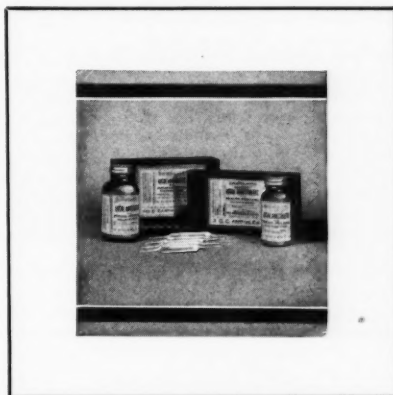
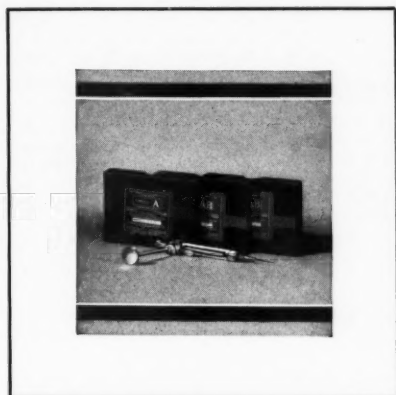
The Ohio Chemical & Manufacturing Co.
1177 Marquette St., N. E., Cleveland, Ohio.
Gentlemen:
☐ Please send me your folder "Articles on Anesthesia," containing a complete list of reprinted articles on Gas Anesthesia and kindred subjects which you supply without charge to those interested.
☐ Please send me complete information on Gas Anesthesia and "Ohio" Gases.

Name _____
Address _____

DD-52



Or use coupon on page 200



COOK and WAITE
LOCAL ANESTHETIC SOLUTIONS
possess:

Uniform Anesthetic Potency—
Low Potential Acidity—
Isotonicity and Sterility.

THEY ARE STABLE

ensuring uniform results, without postoperative complications.



Made Only By

COOK LABORATORIES, Inc.

170 Varick Street, New York, N.Y.



Made Only By

THE ANTIDOLOR MFG. CO., Inc.

*The word "CARPULE" (Registered U. S. Pat. Off. and Canada) is a technical trade mark indicating that the product associated with that name originated with and is offered upon the reputation and responsibility of Cook Laboratories, Inc.

**The sale and use of Waite Cartridges are licensed under patents owned by Cook Laboratories, Inc., New York City.

DIVINUM EST OPUS SEDARE DOLOREM
ALLEVATION OF PAIN IS A SUBLIME TASK
HIPPOCRATES

ABOUT OUR CONTRIBUTORS

WILBUR T. CATE, D.D.S., was graduated from the University of Pennsylvania in 1884. He is member of the A. D. A.; Arkansas State Dental Society; Northwest District Dental Society; American Society of Orthodontists. Doctor Cate's practice is limited to orthodontia at Fort Smith, Arkansas.

CASPER M. EPSTEIN received his B.S. in 1923, M.D. in 1925 from the University of Illinois, and D.D.S. in 1930 from the Chicago College of Dental Surgery. Doctor Epstein is at present engaged in research work and in the writing of two books. He is adjunct oral surgeon to Michael Reese Hospital and attending oral and plastic surgeon to Postgraduate Hospital. Doctor Epstein's practice at 55 East Washington

Street, Chicago, is limited to oral and plastic surgery.

PAUL A. HOWELL is engaged in the general practice of dentistry at 207 Public Service Building, Beloit, Wisconsin. He received his D.D.S. in 1908, and is a member of the A. D. A. and affiliated societies.

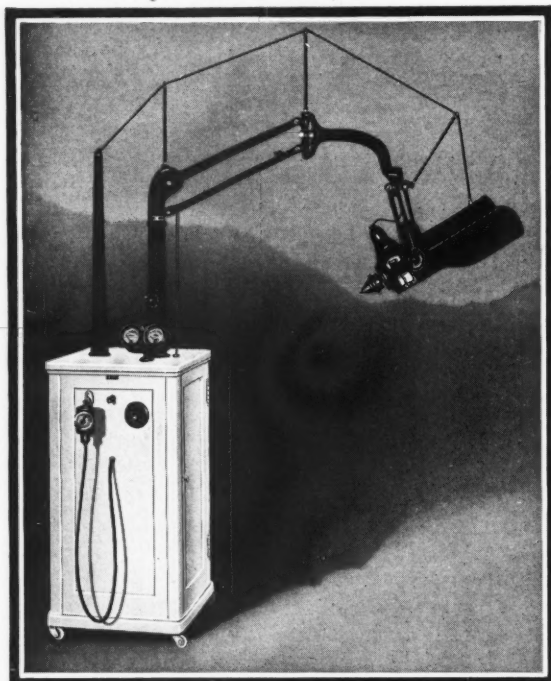
FRANKLIN W. OTTO received his D.D.S. in 1926 from the Chicago College of Dental Surgery. Doctor Otto was instructor in operative dentistry at the Chicago College of Dental Surgery in 1927. He is a member of the A.D.A., the Illinois State Dental Society, and the Chicago Dental Society. Doctor Otto is engaged in the general practice of dentistry at 1604 East Seventy-ninth Street, Chicago.

F. BLAINE RHOBOTHAM, D.D.S. (Northwestern University, 1917); F.A.C.D. (1929),

is a member of the A. D. A., the Illinois State and the Chicago Dental Societies, and is past president of the American Society for the Promotion of Children's Dentistry. Doctor Rhobotham is assistant professor of operative dentistry and director of the Children's Dental Clinic at Northwestern University. His practice is limited to dentistry for children at 55 East Washington Street, Chicago.

J. R. SCHWARTZ, D.D.S. concludes his article "Cavity Preparations for Abutments and Individual Restorations" in this issue. His biography appeared in the April issue of this magazine.

WALTER GERALD HINE, D.D.S. was the author of "Dental Kinks" which appeared in the March issue of THE DENTAL DIGEST.



The New
WEBER
"REGAL"
X-RAY

\$795
(Eastern Zone)

Extraordinary Value

This model is the result of years of experience and is the latest development in the dental X-Ray field. It is complete in its equipment with certain new and exclusive features such as the counter balanced Coolidge Tube assembly which facilitates rapid and accurate operation. To appreciate this Machine you should know all its features. Write for special illustrated folder.

See additional coupon on page 200

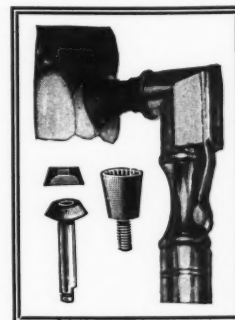
THE WEBER DENTAL MFG. CO., Canton, Ohio.

Without obligation of any kind, please send free literature on X-Rays

..... Chairs Units Engines
Lights Cabinets Cuspidors

Name.....

Address..... D.D. 532

PROPHYLAXIS**The Keystone
of Dental Practice**

PROPHYLAXIS is in reality the keystone of dental practice. Patients have a habit of judging the dentist by the type of prophylaxis he renders. To make this impression favorable use BS Polishers, the soft, resilient rubber polishers that clean and polish better than any other kind, yet do not injure the most delicate tissues. They reach the surfaces under the free margin of the gum and into the interproximal spaces.

BS Polishers can be used on straight, angle or miniature handpieces. They operate best when used on Young's Mandrels. Order through your dealer today.

Send for FREE reprint "Sub-gingival Therapy." Use coupon on page 200.

Young Dental Mfg. Co.
4958 Suburban R.W.
St. Louis, Missouri

The new cleansing and polishing agent in **PEPSODENT**

A NEW type calcium phosphate has been developed and included in Pepsodent Tooth Paste.

This new polishing agent is extremely soft—being approximately one-half as hard as chalk. It is passed through a 400-mesh screen—thus giving it a fineness of texture unequalled by other processes.

The improved Pepsodent Tooth Paste imparts a beautiful lustre to the tooth enamel. It removes mucin plaque with exceptional rapidity and thoroughness.

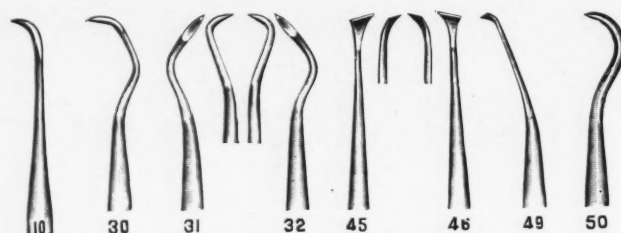
The Formula

Special Calcium Phosphate	59.400%
Benzoic Acid	0.100%
Tragacanth Gum	0.600%
Karaya Gum	1.200%
Calcium Chloride	0.237%
Glycerine, water, flavor	38.463%

*As a flavor, delicious, cooling, redistilled
mint oils are employed.*

THE PEPSODENT COMPANY

919 North Michigan Ave., Chicago, Ill.



A Stimulant Offer For May and June only

The illustrated GLASS STERILIZER will be furnished free of charge with every order of One Set of 8 HYGIENISTS GROUP SCALERS or any other complete set of Scalers as illustrated in our Catalog.

This Jar serves as an ornamental receptacle—holding 36 long handled Instruments in a removable Metal Bracket. Cover Ground airtight.
Actual Size 7 x 4.

The Hygienists Group Scalers A Few Scalers for General Prophylaxis HOLLOW METAL HANDLES

A combination of Eight popular Scalers for General Prophylaxis designed by Dr. Darby-Perry, Dr. Whiteside and Dr. Jaquette.

The Scaler points which are made of Immunity Steel and Rustless are permanently attached to a 1/4-inch Hollow Octagon Metal Handle.

Price per Set of 8 Scalers.....	\$12.00
Price Glass Sterilizer.....	5.50
Price for both.....	\$12.00

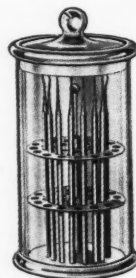
This offer expires July 1, 1932

Coupon on page 200 also

The HU-FRIEDY MFG. CO.
3118 N. Rockwell St., Chicago, Ill.

Enclosed check or money-order for the amount of \$12.00 for which kindly send to me prepaid:
One Set of 8 Hygienists Group Scalers with the Instrument Sterilizer as advertised.

Name.....
Address.....
Dealer.....



For Your Convenience

The advertisers' coupons on page 200 of this issue of THE DENTAL DIGEST are placed there for your convenience and to make it unnecessary for you to cut into the body of the book when communicating with advertisers. This will keep your copies of the magazine from becoming mutilated, will prevent the loss of any text material and will maintain an unbroken file of the information contained in every issue.

THE DENTAL DIGEST

1125 Wolfendale Street

Pittsburgh, Pa.

THE PUBLISHER'S NOTE BOOK

IN January, 1895, dentists throughout the country opened the first issue of this magazine to read, "THE DENTAL DIGEST is the child of necessity. At the present time, in the United States, no journal fills the niche which this periodical will try to occupy."

The first issue of the new DIGEST, published five months ago, might well have said the same thing. Judging from the profession's expressed opinion of the new DIGEST, the magazine in its new form is, as in 1895, "the child of necessity." And we are trying, as best we can, to fill a niche in dental journalism which has hitherto been empty.

Each of the other dental magazines, *The Dental Cosmos*, *Dental Items of Interest*, our own *Oral Hygiene*, and all the others, has its own function. THE DENTAL DIGEST, as its pages show, is trying, not to supplant, but to supplement the service rendered by its contemporaries. An entirely original conception, it appropriates nothing from the editorial "formulae" of the other journals. That isn't necessary.

Certainly, dentistry's expanding scope, now more than ever before, not only makes room for the various types of journals serving the profession, but also actually makes imperative their publication.

Naturally, we succumb to the human temptation to talk about ourselves. The Note Book will, as a rule, do that. But this month it has occurred to me to stress the fact that not only THE DIGEST, but also the dental press, in general, is trying to hasten the pace of dentistry's forward march, to provide a literature without which no profession can progress, to provide the means for disseminating vital information more quickly and to more minds than can ever be reached by dental meetings and dental textbooks, but that does not mean that dental meetings and textbooks are not also indispensable to dentistry's welfare. There is so much to discuss, so much to learn, so many avenues of thought to travel if the profession itself is to serve adequately and intelligently the welfare of mankind.

MERWIN B. MASSOL, *Publisher*